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**"WHO IS US?"—NATIONAL INTERESTS IN AN AGE
OF GLOBAL INDUSTRY**

HEARINGS

BEFORE THE

**JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES**

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

SEPTEMBER 5 AND 13, 1990

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"WHO IS US?"—NATIONAL INTERESTS IN AN AGE OF GLOBAL INDUSTRY

WEDNESDAY, SEPTEMBER 5, 1990

**CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.**

The committee met, pursuant to notice, at 10:06 a.m., in room 2318, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the committee) presiding.

Present: Representatives Hamilton and Scheuer.

Also present: Dorothy Robyn, professional staff member.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative HAMILTON. The committee will come to order. The purpose of today's hearing is to explore the question, what are U.S. national interests in an age of global industry?

The growing importance of multinational firms, international joint ventures, and direct foreign investment has blurred the lines between "them" and "us." This has forced us to begin to rethink whether, and to what extent, our national well-being is still tied to the well-being of American-owned firms.

We are fortunate to have with us today three experts on this subject. Robert Reich is a political economist at the John F. Kennedy School of Government at Harvard University. Author of the recent Harvard Business Review article, "Who Is Us?" he is completing a book on that same question, which will be released next year.

Stephen Cohen is founder and director of the Berkeley Roundtable on the International Economy at the University of California at Berkeley, where he also teaches. Mr. Cohen's most recent book is "Manufacturing Matters: The Myth of the Post-Industrial Economy," written with John Zysman which Business Week selected as 1 of the 10 most important books of 1987.

Clyde Prestowitz directs the newly founded Economic Strategy Institute here in Washington. He was counselor for Japan affairs to the Secretary of Commerce during much of the Reagan administration. That experience provided the grist for his 1988 book, "Trading Places—How We Allowed Japan To Take the Lead."

Gentlemen, we are delighted to have you with us. And, we will begin, Professor Reich, with your testimony and move across the table. We look forward to your testimony. Your prepared statements, of course, will be entered into the record in full.

Mr. Reich, you may begin.

STATEMENT OF ROBERT B. REICH, PROFESSOR OF POLITICAL ECONOMY, JOHN F. KENNEDY SCHOOL OF GOVERNMENT, HARVARD UNIVERSITY, CAMBRIDGE, MA

Mr. REICH. Thank you, Congressman. This is a propitious time for the Joint Economic Committee to look at the question of, as I put it colloquially, "Who Is Us?" Who is an American corporation, or more specifically, what is the interest of the Nation vis-a-vis the corporations that do business here, because the United States has for years adhered to a principle which might be called the principle of national treatment.

We have said, with regard to American multinationals operating abroad, particularly in Europe, in the postwar era, you must treat us, our multinationals, as you treat your own headquartered in Europe. There should be no difference between the two. You should not impose special burdens on our companies. You should treat all alike.

The United States, as we have become more concerned about global competition, is in the midst of abrogating that principle. We are increasingly saying to foreign corporations:

You have special burdens and responsibilities. You have to deal with particular regulatory regimes that American corporations operating in America do not have to deal with.

I want to suggest to you that the abandonment of the principle of national treatment is ill advised. It's ill advised for a number of reasons, not the least of which is ironically because it is becoming less and less the case that American corporations and the profitability and market share enjoyed by American corporations have a direct bearing upon the standard of living of Americans.

The linkage that was once there, particularly throughout most of the postwar era, is now gradually dissolving. You will remember in 1952, he was called Engine Charlie Wilson. Charles Erwin Wilson, testifying before the Senate Armed Services Committee at his confirmation hearing, made that famous remark when he was asked whether he could act in a way that is not in the interest of General Motors. He said, "Well, there is really no difference between the two. We are identical."

That remark was criticized at the time. It was dubious then. I think it's even more dubious now.

American corporations are fast becoming global corporations. American corporations have increased their investments at an extraordinary rate, particularly in the 1980's. This year, it looks like the rate of investment in Europe, Asia, and Latin America by American companies will be about 14 percent over last year. Last year was 13 percent over the year before. The year before that was 24 percent over the previous year.

Now, this is, granted, starting from a relatively small base. But, the trend is unmistakable, particularly when compared to their rate of increase in investment in the United States, which has hovered at about 6 or 7 percent over these same years.

If you look at research and development and high value-added manufacturing and engineering, you see a similar pattern. These

foreign direct investments by American companies are not just in low wage assembly operations; they are in some fairly substantial high value-added operations.

According to the National Science Foundation, U.S. companies have been increasing their foreign research and development. The latest figures we have are from 1988, but between 1986 and 1988 the increase was about 33 percent. In the United States, the comparable figure was around 6 to 7 percent.

Now, I'm not blaming American companies. The new logic of global competition requires that American-based companies become global players, that they do more and more of their production and research and development and high technology all over the world.

In fact, that is the very definition of being a responsible global player. One of the American CEO's that I talk to and I consult with says to me over and over again:

In order to be a global player, we can't play favorites. We can't give the impression in Japan or in France or in Germany or in Latin America that we are biasing our decisions in favor of the U.S. economy. If we have to close plants, we are going to close them equitably around the world. If we are going to open new plants, we are going to open them equitably. We are going to be global players.

Now, meanwhile, of course, foreigners are investing more and more in the United States. We don't have to go over the details. They are well known.

Americans are getting increasingly disturbed about it. I think, in general, it's a good trend.

In fact, I think what we are seeing around the world with regard to global American companies and global foreign companies is a gradual convergence. Global capital, global factories and equipment are going where they have to go for business reasons, to be close to customers, to develop new technologies, to take advantage of skills, to take advantage of low wages that might be available.

American companies are doing it. Foreign companies are doing it as well.

Now, there are some ironies here, because as foreign companies come to the United States, particularly where they have better technology, where they have better means of manufacturing or undertaking various production systems, and American competitors find that they can no longer compete as well, even on their home territory, many American companies have begun to turn to low wage labor as their response to foreign incursions in the United States.

That means transplanting their production to low wage platforms like Mexico. We can see this particularly in the television industry—Japanese and also Dutch and French television manufacturers coming to the United States, often with superior technologies and manufacturing processes, shrinking the American television industry because it couldn't compete even on its own ground.

Zenith, the one remaining television manufacturer, now has only two plants remaining in the United States and does most of its production in Mexico. Notwithstanding, there are thousands of Americans that are producing televisions in the United States, not all just assembly operations but some of them doing high technology, development of high definition televisions for the future. They just happen to be working for foreign companies.

When we talk about American competitiveness, we should be talking about the work force of the United States. The best definition I know of American competitiveness is the capacities of American workers to add value to what is becoming an increasingly integrated world economy, regardless of whom they work for.

A television technician, who is earning a good wage working for Thomson or Sony or Philips, manufacturing and fabricating and developing the next generation of televisions, should be considered part of the U.S. television manufacturing industry. That is good for us.

Now, some people say we still have to worry about ownership. They say ownership matters. And, to be sure, there is a stream of remitted earnings that comes back to Americans when an American company doing whatever it's doing around the world does very well.

But, my point here is that even with regard to ownership, the global economy is changing the terms of debate. The remittances to Americans from their global investments are really dependent not so much on how American firms do, because Americans are increasingly becoming minority shareholders in portfolios of many different firms and many different nations.

The real return to Americans on investments depends upon two things. One is how much money Americans can save and invest for investments around the world. And two, the wisdom with which they make those investments in terms of their portfolios. It depends less and less on the success of American-owned companies per se.

Now, another objection and another concern has been control. A lot of Americans say:

Well, Reich, you may be right with regard to what America's work force can do, the importance of foreign direct investment in the United States, the whole question of "Who Is Us?" But, what about the issues of control? Shouldn't we be worried if foreigners control more and more of the U.S. industrial base? Shouldn't we want Americans, American citizens, to be in control of the reins of production?

And, that seems intuitively to make a lot of sense. But, that concern is based I think on a questionable premise.

That premise is that Americans, American executives, American chief executive officers, American directors of corporations, are authorized to, and motivated to, sacrifice profits around the world for the sake of improving American competitiveness at home, and that they would intentionally sacrifice a profitable opportunity around the world for the sake of building up the American work force. That is not the logic of American capitalism in this world.

American executives are not authorized to do that by their shareholders. American executives, faced with a profitable opportunity around the world, do abandon America. We have seen that again and again, in industry after industry.

Again, I am not blaming them. That is the logic in which they are working. American shareholders demand that. Institutional investors demand that.

If American chief executive officers acted out of patriotic duty rather than the profit motive, they would at the least be subject to a breach of fiduciary duty, lawsuits, or at worse a takeover. That is how we have organized our system of American capitalism.

So, to assume that American executives are necessarily more patriotic and, therefore, will bias their decisions in favor of America is, I think, to indulge in false logic about the realities of American capitalists. And, as I said before, American CEO's are as interested in maintaining the image of being good citizens wherever they do business as our foreign companies are here.

Well, what about Japan? Is Japan a special case? Should we worry about Japan? I think Japan is something of a special case.

The Japanese have been slower than European firms operating in the United States to promote Americans to high levels of responsibility in their firms. The Japanese have been slower than European firms and other world firms operating in the United States to develop local sources of components and supplies. The Japanese have been slower than other firms, other global firms, to move high value added to the United States.

The question is whether it's just a lagging indicator, whether the Japanese are, over the next 10 years, going to increase their American content in all those dimensions or whether there is something about the Japanese system, particularly the relationship between firms and the Government, that creates a special grounds for concern for the United States.

My thesis does not depend on us deciding today, or any day, that the Japanese are less responsible in the United States, are less good for the United States, than are Europeans, Americans and other global companies. My thesis is only that when you consider all the legislation that is now percolating through Congress, and has percolated through the agents and out through Congress, and all of the policies that American agencies have evoked over the past few years with regard to differentiating between American and non-American firms, that many of those policies are heading us in the wrong direction.

It's not necessarily that Japanese are more responsible in the United States, but that we can no longer assume that simply because Americans run or own the companies, American companies are automatically going to behave in the way that we want them to behave in the United States.

I have enclosed in my prepared statement, and listed and enumerated, a variety of areas of public policy. I realize on this first day of hearings you want to get into general questions of corporate responsibility and corporate performance in the United States, and you want to save the policy discussion for a later hearing.

But, it's difficult to talk about whether corporate nationality matters without talking about matters for what. And, so I have enumerated various policy areas governing trade, taxation, political activities, foreign direct investment, and so forth. And, I'm pleased to talk about any of those areas.

Thank you.

[The prepared statement of Mr. Reich, together with an attached article, follows:]

PREPARED STATEMENT OF ROBERT B. REICH

Does Corporate Nationality Matter?

Mr. Chairman and Committee members:

My name is Robert B. Reich. I teach political economy at Harvard's Kennedy School of Government. Throughout most of the 1970s I was director of the Federal Trade Commission's Policy Planning staff, responsible for keeping tabs on the competitive structure of American industry; throughout the 1980s I have been researching and writing about the competitiveness of the United States.

American "competitiveness" is not the same as the profitability or world market share of American-owned corporations. A better definition of competitiveness is the capacity of Americans to maintain and enhance our standard of living, without going into debt to the rest of the world. This goal depends less on the competitiveness of American corporations than on the value that the American work force is able to add to the global economy, regardless of the nationality of the corporations that buy their labors. In other words, in the new global economy it is not what we own that counts; it is what we are able to do.

This conclusion is at odds with one of the most fundamental tenets of American competitiveness policy--a tenet perhaps best exemplified by a statement made thirty-seven years ago before another Senate committee, by Charles Erwin Wilson, then president of General Motors, who was to be confirmed as Eisenhower's Secretary of Defense. "Engine" Charlie, as he was known, opined that he would surely be able to make a decision in the interest of the United States that was adverse to the interest of GM, but that such a conflict would never arise because "what was good for our country was good for General Motors, and vice versa. The difference did not exist. Our company...goes with the welfare of the country."¹

However dubious this statement might have appeared in 1953, its truth is even more doubtful today. What is good for the American corporation is no longer necessarily good for the American work force as it engages, increasingly, in international competition. American corporations are fast becoming global corporations that do a large share of their work abroad.

The New Global American Corporation

The American multinational corporation has, of course, been with us for many decades. But the new global American corporation marks a major step in its evolution. A much larger proportion of its work force is foreign; and, increasingly, it does its most

¹ United States Senate, Armed Services Committee, Confirmation Hearings of Charles E. Wilson as Secretary of Defense, February 18, 1953.

sophisticated work--including research, development, engineering, and complex fabrication--outside the United States.

Some 40 percent of IBM's world employees are now foreign, and the percentage is growing. IBM Japan boasts more than 18,000 Japanese employees and annual sales of more than \$6 billion, making it one of Japan's major exporters of computers. Or consider Whirlpool. After cutting its American work force by 10 percent, shifting much of its production to Mexico, and buying Dutch-owned Philips's appliance business, Whirlpool now employs 43,000 people in 45 countries--most of them non-Americans. Or Seagate Technology--a California-based world leader in hard-disk drives--27,000 of whose 40,000 employees work in Southeast Asia.

American firms now employ 11 percent of the work force of Northern Ireland. On the other side of the world, 200 American firms employ more than 100,000 Singaporeans to fabricate and assemble electronic components. Singapore's largest employer is General Electric. Taiwan counts AT&T, RCA, and Texas Instruments among its largest exporters.

Even America's major utilities are going global. Bell South, the largest provider of basic telephone services in the U.S., now has operations in more than 20 countries--developing cellular telephone networks in Argentina and France, cable systems in France, management software in India, voice and data system designs in China, digital network technical services in Guatemala. Bell Atlantic just spent \$1.5 billion to acquire New Zealand's Telecom, that nation's largest telephone company.

All told, more than 20 percent of the output of American firms is now produced by foreign workers, outside the United States, and the percentage is rising quickly. At the present rate, overseas capital spending by American corporations will rise 14 percent this year, on top of 13 percent last year, and 13 percent the year before. That's compared to a rate of capital investment in the United States hovering at a bit over 6 percent a year.² American firms are now investing at a higher rate in Western Europe alone than they are in the United States. They've accounted for over half of the flurry of acquisitions of European companies in the last six months, and a hefty percentage of the new factories now going up.

Much of what the new global American corporation produces abroad is exported back to the United States. In fact, approximately one-quarter of America's trade imbalance is attributable to American firms which make or buy things abroad and then ship them back here. In these terms, American firms are no less competitive than they were in the 1960s; they

² Figures from Bureau of Economic Analysis, U.S. Department of Commerce, "Foreign Direct Investment by U.S. Companies," various issues. See also *Translink's European Deal Review* (June, 1990).

account for about the same share of global exports as they did 25 years ago--17 percent--even though exports from the United States have steadily declined.³

What's more, American firms are hiring skilled workers abroad, to do complex things. Texas Instruments maintains a software development facility in Bangalore, where fifty Indian programmers are linked by satellite with Texas Instrument's Dallas headquarters. Engineers in Singapore, meanwhile, are developing a new generation of laser printers for Hewlett Packard, and high-resolution video screens for Apple. In August, Hewlett Packard announced that it was moving its world headquarters for the production of personal computers to Grenoble, France. The list of American firms that have recently opened R&D labs in Japan reads like a "Who's Who" of corporate America: Eastman Kodak, W.R. Grace, DuPont, Merck, Procter & Gamble, Upjohn, and IBM, to name a few. And American firms are scrambling to set up labs in Europe.

Here again, the aggregate figures suggest the trend: According to the National Science Foundation, American firms increased their overseas spending on R&D by 33 percent between 1986 and 1988 (the last date for which such data are available), compared with a 6 percent increase in R&D in the United States.⁴ For American firms, it is coming to be no longer the case that highest "value added" occurs in the United States.

The Global Foreign Corporation in America

Meanwhile, of course, foreign companies have been stepping up their investments in the United States. Foreign firms now account for more than 13 percent of America's manufacturing assets and employ more than 8 percent of America's manufacturing workers--or about 3 million Americans.⁵ Even as some American firms have reduced their American work forces, foreign firms have expanded theirs: Between 1987 and 1990, the Big Three laid off 9,063 American autoworkers, while foreign firms hired more than 12,000 Americans. Since 1975, over 20,000 Americans have lost their jobs in American firms that once manufactured televisions in the United States, but over 15,000 Americans have been hired by foreign firms to manufacture televisions in the United States.

³ Calculations from Robert E. Lipsey and Irving Kravis, "The Competitive and Comparative Advantage of U.S. Multinationals," 1957-1983, Working Paper No. 2051, National Bureau of Economic Research, November, 1986.

⁴ National Science Foundation, *Highlight*, March 9, 1990, Table 2.

⁵ These and related figures from Bureau of Economic Analysis, U.S. Department of Commerce, "Foreign Direct Investment in the United States: Operations of U.S. Affiliates of Foreign Companies," various issues, also Bureau of the Census, and the Federal Trade Commission.

Foreign firms are also stepping up their research, development, engineering, and complex production in the United States. During the 1980s, foreign firms invested about the same amount of money in the U.S. on R&D per manufacturing worker than did American firms.⁶ European multinationals, like their U.S. counterparts, place R&D activities in all of the major markets in which they participate; they show little if any tendency to concentrate R&D at home.⁷

Some nation's firms are, of course, more nationalistic than others, in that they tend to keep more of their high value added at home, and are more reluctant to promote foreign nationals to high positions of authority. Japanese firms, in particular, display such characteristics--although even here it is difficult to generalize because certain Japanese firms, like Sony, have made more progress toward becoming truly global corporations that have other Japanese firms.

The point of my argument, however, is not that all foreign-owned firms automatically act in ways that are good for America; it is that one can no longer assume that American firms automatically function in ways that are good for America. To the extent that we want global firms of whatever nationality to meet certain standards of behavior within the United States, such standards should apply equally to foreign and American firms.

Ownership and Control Less Important Than Work Force Learning

American shareholders do, of course, benefit from the global successes of American corporations to the extent that such successes are reflected in higher share prices; and the entire U.S. economy benefits to the extent that the overseas profits of American companies are remitted to the United States. But note that American investors also benefit from the successes of non-American companies in which Americans own minority interests. (Cross-border equity investments by Americans, British, Japanese, and West Germans are increasing by about 20 percent a year.)

In today's global economy, the total return to Americans from their equity investments is not solely a matter of the success of particular companies in which Americans happen to have a controlling interest; it depends, rather, on the total amount of American savings

⁶ See E. Graham and P. Krugman, Foreign Direct Investment in the United States (Washington, D.C.: Institute for International Economics, 1990), pp. 58-59, Table 3-3.

⁷ See, for example, John Cantwell, Technological Innovation and Multinational Corporations (London: Blackwell, 1984).

investment in global portfolios comprising both American and foreign-owned companies--and on the care and wisdom with which American investors select such portfolios.

That American citizens are in "control" of a certain global corporation as its top officers and directors is no guarantee that the corporation will act in the interests of America. The logic of global capitalism, in fact, requires that American firms allocate their production across many nations, wherever they can earn the highest return for their shareholders. Not even the most patriotic of American executives is authorized by shareholders to forego profitable opportunities abroad for the sake of improving the competitiveness of the American work force.

The new logic of global capitalism requires that American firms go to great lengths to show their foreign employees, suppliers, customers, and host governments that they are not "playing favorites" by biasing their decisions in favor of the United States. They must be "good corporate citizens" wherever they do business, as must any other global corporation. (The same principle applies to Japanese firms; if they continue to display nationalistic tendencies, they will encounter increasing resistance from their foreign constituencies. Not the least, they will have difficulty hiring highly talented non-Japanese executives.)

Even when it comes to national security, the fact of American nationality is less relevant than the location of production. Unlike foreign assets held by American firms that are subject to foreign political control and, occasionally, foreign expropriation, foreign-owned assets in the United States are secure against sudden changes in foreign governments' policies. The current crisis in Kuwait proves ample evidence. In World War Two, Ford's German subsidiary contributed to the war effort on the side of Germany.

Policy Implications

During the last few years, as American policy makers have become increasingly worried about America's declining competitiveness, a number of laws and policies have been invoked to stem the tide. But because they are premised on the incorrect notion that the competitiveness of the American corporation is roughly equivalent to the competitiveness of America, these measures may end up jeopardizing the real standard of living of Americans instead of enhancing it. Consider these examples:

Publicly-supported research and development. By law, American national laboratories may license their inventions to private firms, but only to American-owned private firms. Similarly, participation in research consortia funded in part by the federal government is limited to American-owned firms. Such policies make little sense. The goal of publicly-

supported research and development should be to enhance the skills and insights of American scientists, engineers, and technicians. But there is no reason to suppose that American firms that receive federal research support will necessarily utilize their research in the United States; they may just as easily apply it to engineering and development projects abroad. A more sensible policy, therefore, would require that any global firm that receives government research assistance--regardless of nationality--undertake in the United States a certain amount of the engineering and development that flows from that research.

Trade policy. For the same reason, we should be less interested in opening foreign markets to American-owned firms (which may in fact be doing or buying overseas much of what they sell abroad) than in opening those markets to companies that employ Americans--even if they happen to be foreign-owned. By this logic, for example, it makes little sense for the United States Trade Representative to its expend scarce bargaining "chits" trying to get Japan to open its market to retail firms like "Toys-R-Us" (most of whose inventory comes from Southeast Asia and Latin America). By the same token, a high priority should be to ensure that the European Community not erect barriers to the importation of American-based entertainment--television shows, videos, records, and so forth--even if the Americans who produce such entertainment happen to work for Sony.

Antitrust policy. The Justice Department is about to relax antitrust policy to permit certain joint production agreements, and has signaled that the relaxed policy would apply only to American-owned firms; the House of Representatives already has moved to deny foreign-owned companies relaxed antitrust rules on joint production ventures. But corporate nationality has little bearing upon whether a joint production agreement potentially enhances the competitiveness of the American work force by generating significant economies of scale within the United States. A decision whether to allow such an agreement should turn, rather, on whether participating firms could gain such efficiencies on their own, simply by enlarging their investment in the United States; whether such a combination of companies would allow higher levels of productivity within the United States; and whether the combination would substantially diminish global competition. National origin should have nothing to do with it.

Foreign direct investment. Under the Exon-Florio Amendment to the Omnibus Trade and Competitiveness Act of 1988, a high-level Committee on Foreign Investments in the United States can block a proposed foreign acquisition of an American firm. Other proposed legislation would make it even more difficult for foreign firms to acquire American companies. These policies, too, make little sense. In general, foreign-owned companies displace American-owned firms in just those industries where the foreign businesses are simply more productive. Thus it is not surprising that America's governors spend a great deal of time and energy promoting their states to foreign investors and offer big subsidies to

foreign companies to locate in their states, even if they compete head-on with existing American-owned businesses.

If there is reason to believe that a proposed acquisition of an American firm by a foreign firm will give the foreign firm--or a group of foreign firms--the capacity to monopolize an industry, America's antitrust laws are sufficient to block the acquisition. Thus, to the extent that Japanese semiconductor firms are behaving like a cartel, and the purchase of an American semiconductor supplier like Perkin-Elmer would enhance their market power, the Justice Department or the FTC should prevent the acquisition. But note that the decision does not turn on corporate nationality per se, but on corporate behavior. Precisely the same stricture should be applied to American firms operating in the same monopolistic manner.

Tax evasion. Responding to Internal Revenue Service figures showing that foreign-owned firms in the U.S. in 1986 reported \$550 billion in gross receipts but showed \$1.5 billion in tax losses, several bills have been introduced in Congress to give IRS agents new powers to monitor U.S. units of foreign multinationals and impose a capital gains tax on the sale of the holdings of some foreigners. But to the extent that global firms have been evading U.S. taxes by transferring profits from their American to their foreign units, the problem is hardly limited to foreign-owned firms. Using many of the same techniques (many of which, after all, were devised by American tax lawyers in the first place), global American corporations have for years been using "transfer pricing" to allocate their profits in ways that reduce their income taxes. Here again, corporate nationality is irrelevant; if a federal response is warranted, it should apply broadly to all global corporations.

Political activities. Bills are being readied to bar American subsidiaries of foreign corporations from forming political action committees, or hiring former federal officials from lobbying on their behalf. While concerns about foreign interference in the American political process are understandable, we should nonetheless remind ourselves that--as in the other policy areas enumerated above--the underlying issue has less to do with corporate nationality than with corporate behavior, regardless of nationality. To the extent that it is appropriate for American corporations to have access to Washington policy makers, it is just as appropriate for foreign firms operating in the United States to have such access. (Restrictions on the political activities of such foreign companies necessarily reduce the access of Americans working within such companies to the American political process; American employees of such firms as Pillsbury, First Boston, and Marine Midland Bank would thus be denied the sort of representation accorded to their compatriots who happen to work for American-owned firms.) On the other hand, to the extent that such access is misused--with the result that the firm is helped but the nation's interests are jeopardized--the problem is the same whether it is caused by a foreign or an American firm. Restrictions on PACs, and on the lobbying

activities of former federal officials, in order to guard against such misuse, would seem appropriate regardless of the nationality of the firms that utilize them.

A National Competitive Strategy

Nothing I have said is inconsistent with a bold national strategy to improve American competitiveness. Indeed, I have long advocated just such an initiative. At its heart would be public investments in education, training, and infrastructure designed to improve the capacities of Americans to identify and solve new problems, and link those capacities to the world economy. A skilled work force, coupled with superb infrastructure, will attract global capital to create good jobs. Such a strategy would also feature agreements with global corporations to undertake high value added development and production in the United States, and thus give Americans on-the-job training in the technologies of the future.

My point today is simply to suggest that, however we design our industrial policy, the nationality of corporate ownership should not play a significant role. In today's new global economy, every factor of production is highly mobile, save one. Money, technology, and state-of-the-art factories and equipment move almost effortlessly across borders. Corporations are becoming global entities that are only loosely linked to nations, if at all. Our competitive future depends on the least mobile factor of production, which is rooted at home: our work force.

Who Is Us?

by Robert B. Reich



Harvard Business Review

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Who Is Us?

by Robert B. Reich

Across the United States, you can hear calls for us to revitalize our national competitiveness. But wait —

who is "us"? Is it IBM, Motorola, Whirlpool, and General Motors? Or is it Sony, Thomson, Philips, and Honda?

Consider two successful corporations:

□ Corporation A is headquartered north of New York City. Most of its top managers are citizens of the United States. All of its directors are American citizens, and a majority of its shares are held by American investors. But most of Corporation A's employees are non-Americans. Indeed, the company undertakes much of its R&D and product design, and most of its complex manufacturing, outside the borders of the United States in Asia, Latin America, and Europe. Within the American market, an increasing amount of the company's product comes from its laboratories and factories abroad.

□ Corporation B is headquartered abroad, in another industrialized nation. Most of its top managers and

directors are citizens of that nation, and a majority of its shares are held by citizens of that nation. But most of Corporation B's employees are Americans. Indeed, Corporation B undertakes much of its R&D and new product design in the United States. And it does most of its manufacturing in the U.S. The company ex-

The competitiveness of American-owned corporations is not the same as American competitiveness.

ports an increasing proportion of its American-based production, some of it even back to the nation where Corporation B is headquartered.

Now, who is "us"? Between these two corporations, which is the American corporation, which the foreign corporation? Which is more important to the economic future of the United States?

As the American economy becomes more globalized, examples of both Corporation A and B are increasing. At the same time, American concern for the competitiveness of the United States is increasing.

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WHO IS US?

Typically, the assumed vehicle for improving the competitive performance of the United States is the American corporation—by which most people would mean Corporation A. But today, the competitiveness of American-owned corporations is no longer the same as American competitiveness. Indeed, American ownership of the corporation is profoundly less relevant to America's economic future than the skills, training, and knowledge commanded by American workers—workers who are increasingly employed within the United States by foreign-owned corporations.

So who is us? The answer is, the American work force, the American people, but not particularly the American corporation. The implications of this new answer are clear: if we hope to revitalize the competitive performance of the United States economy, we must invest in people, not in nationally defined corporations. We must open our borders to investors from around the world rather than favoring companies that may simply fly the U.S. flag. And government policies should promote human capital in this country rather than assuming that American corporations will invest on "our" behalf. The American corporation is simply no longer "us."

Global Companies

American corporations have been abroad for years, even decades. So in one sense, the multinational identity of American companies is nothing new. What is new is that American-owned multinationals are beginning to employ large numbers of foreigners relative to their American work forces, are beginning

to rely on foreign facilities to do many of their most technologically complex activities, and are beginning to export from their foreign facilities—including bringing products back to the United States.

Around the world, the numbers are already large—and still growing. Take IBM—often considered the thoroughbred of competitive American corporations. Forty percent of IBM's world employees are foreign, and the percentage is increasing. IBM Japan boasts 18,000 Japanese employees and annual sales of more than \$6 billion, making it one of Japan's major exporters of computers.

Or consider Whirlpool. After cutting its American work force by 10% and buying Philips's appliance business, Whirlpool now employs 43,500 people around the world in 45 countries—most of them non-Americans. Another example is Texas Instruments, which now does most of its research, development, design, and manufacturing in East Asia. TI employs over 5,000 people in Japan alone, making advanced semiconductors—almost half of which are exported, many of them back to the United States.

American corporations now employ 11% of the industrial work force of Northern Ireland, making everything from cigarettes to computer software, much of which comes back to the United States. More than 100,000 Singaporeans work for more than 200 U.S. corporations, most of them fabricating and assembling electronic components for export to the United States. Singapore's largest private employer is General Electric, which also accounts for a big share of that nation's growing exports. Taiwan counts AT&T, RCA, and Texas Instruments among its largest exporters. In fact, more than one-third of Taiwan's notorious trade surplus with the United States comes from U.S. corporations making or buying



things there, then selling or using them back in the United States. The same corporate sourcing practice accounts for a substantial share of the U.S. trade imbalance with Singapore, South Korea, and Mexico—raising a question as to whom complaints about trade imbalances should be directed.

The pattern is not confined to America's largest companies. Molex, a suburban Chicago maker of connectors used to link wires in cars and computer boards, with revenues of about \$300 million in 1988,

U.S. companies haven't lost their competitive edge—they've just moved their base of operations.

has 38 overseas factories, 5 in Japan. Loctite, a mid-size company with sales in 1988 of \$457 million, headquartered in Newington, Connecticut, makes and sells adhesives and sealants all over the world. It has 3,500 employees—only 1,200 of whom are Americans. These companies are just part of a much larger trend: according to a 1987 McKinsey & Company study, America's most profitable midsize companies increased their investments in overseas production at an annual rate of 20% between 1981 and 1986.

Overall, the evidence suggests that U.S. companies have not lost their competitive edge over the last 20 years—they've just moved their base of operations. In 1966, American-based multinationals accounted for about 17% of world exports, since then their share has remained almost unchanged. But over the same period, the share of exports from the United States in the world's total trade in manufactures fell from 16% to 14%. In other words, while Americans exported less, the overseas affiliates of U.S.-owned corporations exported more than enough to offset the drop.

The old trend of overseas capital investment is accelerating: U.S. companies increased foreign capital spending by 24% in 1988, 13% in 1989. But even more important, U.S. businesses are now putting substantial sums of money into foreign countries to do R&D work. According to National Science Foundation figures, American corporations increased their overseas R&D spending by 33% between 1986 and 1988, compared with a 6% increase in R&D spending in the United States. Since 1987, Eastman Kodak, W.R. Grace, Du Pont, Merck, and Upjohn have all opened new R&D facilities in Japan. At Du Pont's Yokohama laboratory, more than 180 Japanese scientists and technicians are working at developing new materials technologies. IBM's Tokyo Research Lab, tucked away behind the far side of the Imperial Palace in

downtown Tokyo, houses a small army of Japanese engineers who are perfecting image-processing technology. Another IBM laboratory, the Kanagawa arm of its Yamato Development Laboratory, houses 1,500 researchers who are developing hardware and software. Nor does IBM confine its pioneering work to Japan: recently, two European researchers at IBM's Zurich laboratory announced major breakthroughs into superconductivity and microscopy—earning them both Nobel Prizes.

An even more dramatic development is the arrival of foreign corporations in the United States at a rapidly increasing pace. As recently as 1977, only about 3.5% of the value added and the employment of American manufacturing originated in companies controlled by foreign parents. By 1987, the number had grown to almost 8%. In just the last two years, with the faster pace of foreign acquisitions and investments, the figure is now almost 11%. Foreign-owned companies now employ 3 million Americans, roughly 10% of our manufacturing workers. In fact, in 1989, affiliates of foreign manufacturers created more jobs in the United States than American-owned manufacturing companies.

And these non-U.S. companies are vigorously exporting from the United States. Sony now exports audio- and videotapes to Europe from its Dothan, Alabama factory and ships audio recorders from its Fort Lauderdale, Florida plant. Sharp exports 100,000 microwave ovens a year from its factory in Memphis, Tennessee. Last year, Dutch-owned Philips Consumer Electronics Company exported 1,500 color televisions from its Greenville, Tennessee plant to Japan. Its 1990 target is 30,000 televisions; by 1991, it plans to export 50,000 sets. Toshiba America is sending projection televisions from its Wayne, New Jersey plant to Japan. And by the early 1990s, when Honda annually exports 50,000 cars to Japan from its Ohio production base, it will actually be making more cars in the United States than in Japan.

The New American Corporation

In an economy of increasing global investment, foreign-owned Corporation B, with its R&D and manufacturing presence in the United States and its reliance on American workers, is far more important to America's economic future than American-owned Corporation A, with its platoons of foreign workers. Corporation A may fly the American flag, but Corporation B invests in Americans. Increasingly, the competitiveness of American workers is a more important definition of "American competitive-

How Foreign-Owned Businesses Can

What kind of foreign-owned businesses really contribute to national competitiveness? Actually, there are four models to consider, each doing business at a different level of complexity and local intellectual content: importers, assemblers, plant complexes, and fully integrated business operations. For those complex discrete manufacturing businesses such as electronics and automobiles that are at the heart of trade concerns, it is only fully integrated operations that build the local skill base and infrastructure in ways that increase international competitiveness and consequently raise living standards. They do so by bringing in-country the essential engine of business competitiveness.

The Matsushita consumer electronics complex at Kadoma, Japan demonstrates the importance of a fully integrated operation. All four key intellectual elements of the television and videocassette recorder (VCR) product and production systems—product design, manufacturing, process engineering, and vendor management—take place there. Although many components are outsourced, these key intellectual elements are “insourced” at Kadoma so they can be tightly integrated and optimized. Matsushita even builds most of its manufacturing equipment. Mech decks, the highly complex head and tape transport assemblies for VCRs, are assembled by Matsushita robots.

This tight integration enables Matsushita to raise quality, reduce labor hours, provide a high level of product variety to the market, and rapidly incorporate new technology into new products. The mech decks are designed so that every part can be assembled with a simple vertical motion, which facili-

tates 100% assembly automation and high process reliability. This “producible design,” which can only be accomplished when there is close teamwork among product designers, process designers, component vendors, and manufacturing managers, in part explains why Matsushita has been able to maintain a leading competitive position worldwide despite the yen shock.

Typical importing and assembly operations are at the opposite end of the scale. Importing companies limit local economic activity to sales, marketing, and distribution; their aim is to win local market share and broaden the business base for an engine of competitiveness located offshore. (We use the term “local” to mean activity carried out in the host country.) Assemblers, a category that includes the U.S. organizations of many Asian-owned consumer electronics companies, make products locally, using designs, processes, and management approaches developed in the home country. They may buy some components locally, but they are likely to import key components, and all the sourcing decisions are made in the home country. As a result, it is difficult for local companies to become suppliers, and the most important supply positions often go to local subsidiaries of home-country suppliers.

Plant complexes add a further level of value added and begin to add intellectual content. Typically, a complex will fabricate product components, and the amount of local engineering content increases. Examples in the United States include the Nissan complex in Smyrna, Tennessee, which makes its own transmissions and transaxels, and the Sony television complex in San Diego, California, which

ness” than the competitiveness of American companies. Issues of ownership, control, and national origin are less important factors in thinking through the logic of “who is us” and the implications of the answer for national policy and direction.

Ownership is less important. Those who favor American-owned Corporation A (that produces overseas) over foreign-owned Corporation B (that produces here) might argue that American ownership generates a stream of earnings for the nation's citizens. This argument is correct, as far as it goes. American shareholders do, of course, benefit from the global successes of American corporations to the extent that such successes are reflected in higher share prices. And the entire U.S. economy benefits to the extent that the overseas profits of American companies are remitted to the United States.

But American investors also benefit from the successes of non-American companies in which Americans own a minority interest—just as foreign citizens benefit from the successes of American companies in which they own a minority interest, and such cross-ownership is on the increase as national restrictions on foreign ownership fall by the wayside. In 1989, cross-border equity investments by Americans, British, Japanese, and West Germans increased 20%, by value, over 1988.

The point is that in today's global economy, the total return to Americans from their equity investments is not solely a matter of the success of particular companies in which Americans happen to have a controlling interest. The return depends on the total amount of American savings invested in global portfolios comprising both American and

Contribute to U.S. Competitiveness

makes its own tubes and (together with other Sony operations in California) has a significant engineering force. Still, a plant complex falls well short of a fully integrated business operation. The key intellectual elements of the product and production system are still in the home country, even if the distinctions are becoming more subtle. High-resolution tubes for computer monitors and jumbo television tubes that drive the product and process technology are made at Sony's lead plant in Inazawa, Japan. The U.S. plant makes more mature products.

Assembly operations and plant complexes (particularly the latter) look good on simple economic measures. They employ many assembly workers and some middle managers and engineers. They also can help with catch-up in weak areas of management skills: the GM-Toyota NUMMI plant in California, for example, has shown U.S. managers that management approach rather than automation accounts for much of the Japanese advantage in assembly productivity. These operations cannot bring the host country to the forefront of competitiveness, however, because the engine of competitiveness remains offshore. Thus they do not upgrade the local skill base and technology infrastructure to world leader status; they won't attract the best young managers and engineers, and they are unlikely to stimulate the creative work that spins off new businesses (the "Silicon Valley effect").

The real payoff from local operations for foreign-owned companies, then, comes in the form of fully integrated business operations—when product design, process design, manufacturing, and vendor management are co-located and tightly integrated

in-country and the operation is set up to do business in the global market. In this fully integrated operation, the span of activities closely resembles similar operations in the home country.

Examples of fully integrated operations in the United States include the consumer electronics businesses of Philips and Thomson (which were built from acquired companies) and, increasingly, Honda's automobile business. These companies appear to have made commitments to devolve whole product lines to their U.S. subsidiaries. The new Honda Accord Coupe, for example, was designed and is made only in the United States and is exported in small quantities to Japan. Likewise, U.S. multinational companies have built many successful fully integrated operations in other parts of the world, for example, IBM's, TI's, and GE Plastics's operations in Japan, Hewlett-Packard's in Singapore, and Ford's in Europe.

The foreign-owned businesses that benefit national competitiveness most are those that commit their engine of competitiveness to the host country. When foreign-owned companies come only to win local market share, they add little to the host country's competitiveness. When they come to build a platform to compete in global markets, then they contribute to national competitiveness.

—Todd Hixon and Ranch Kimball

Todd Hixon is a vice president and high-tech practice leader with the Boston Consulting Group. Ranch Kimball, a manager with BCG, has worked extensively with consumer electronics and automotive companies. Both worked with the American Electronics Association in its high definition television initiative.

foreign-owned companies—and on the care and wisdom with which American investors select such portfolios. Already Americans invest 10% of their portfolios in foreign securities; a recent study by Salomon Brothers predicts that it will be 15% in a few years. U.S. pension managers surveyed said that they predict 25% of their portfolios will be in foreign-owned companies within 10 years.

Control is less important. Another argument marshaled in favor of Corporation A might be that because Corporation A is controlled by Americans, it will act in the best interests of the United States. Corporation B, a foreign national, might not do so—indeed, it might act in the best interests of its nation of origin. The argument might go something like this: even if Corporation B is now hiring more Americans and giving them better jobs than Corporation

A, we can't be assured that it will continue to do so. It might bias its strategy to reduce American competitiveness, it might even suddenly withdraw its investment from the United States and leave us stranded.

But this argument makes a false assumption about American companies—namely, that they are in a position to put national interests ahead of company or shareholder interests. To the contrary: managers of American-owned companies who sacrificed profits for the sake of national goals would make themselves vulnerable to a takeover or liable for a breach of fiduciary responsibility to their shareholders. American managers are among the loudest in the world to declare that their job is to maximize shareholder returns—not to advance national goals.

Apart from wartime or other national emergencies, American-owned companies are under no spe-

cial obligation to serve national goals. Nor does our system alert American managers to the existence of such goals, impose on American managers unique requirements to meet them, offer special incentives to achieve them, or create measures to keep American managers accountable for accomplishing them. Were American managers knowingly to sacrifice profits for the sake of presumed national goals, they would be acting without authority, on the basis of their own views of what such goals might be, and without accountability to shareholders or to the public.

Obviously, this does not preclude American-owned companies from displaying their good corporate citizenship or having a sense of social responsibility. Sensible managers recognize that acting "in the public interest" can boost the company's image; charitable or patriotic acts can be good business if they promote long-term profitability. But in this regard, American companies have no particular edge over foreign-owned companies doing business in the United States. In fact, there is every reason to believe that a foreign-owned company would be even more eager to demonstrate to the American public its good citizenship in America than would the average American company. The American subsidiaries of Hitachi, Matsushita, Siemens, Thomson, and many other foreign-owned companies lose no opportunity to contribute funds to American charities, sponsor community events, and support public libraries, universities, schools, and other institutions. (In 1988, for example, Japanese companies operating in the United States donated an estimated \$200 million to American charities; by 1994, it is estimated that their contributions will total \$1 billion.)¹

By the same token, American-owned businesses operating abroad feel a similar compulsion to act as good citizens in their host countries. They cannot afford to be seen as promoting American interests; otherwise they would jeopardize their relationships with foreign workers, consumers, and governments. Some of America's top managers have been quite explicit on this point. "IBM cannot be a net exporter from every nation in which it does business," said Jack Kuehler, IBM's new president. "We have to be a good citizen everywhere." Robert W. Galvin, chairman of Motorola, is even more blunt: should it become necessary for Motorola to close some of its factories, it would not close its Southeast Asian plants before it closed its American ones. "We need our Far Eastern customers," says Galvin, "and we cannot alienate the Malaysians. We must treat our employees all over the world equally." In fact, when it becomes necessary to reduce global capacity, we might expect American-owned businesses to slash more jobs in the United States than in Europe (where

labor laws often prohibit precipitous layoffs) or in Japan (where national norms discourage it).

Just as empty is the concern that a foreign-owned company might leave the United States stranded by suddenly abandoning its U.S. operation. The typical argument suggests that a foreign-owned company might withdraw for either profit or foreign policy motives. But either way, the bricks and mortar would still be here. So would the equipment. So too would be the accumulated learning among American workers. Under such circumstances, capital from an-

A nation's most important competitive asset is the skills and learning of its work force.

other source would fill the void; an American (or other foreign) company would simply purchase the empty facilities. And most important, the American work force would remain, with the critical skills and capabilities, ready to go back to work.

After all, the American government and the American people maintain jurisdiction—political control—over assets within the United States. Unlike foreign assets held by American-owned companies that are subject to foreign political control and, occasionally, foreign expropriation, foreign-owned assets in the United States are secure against sudden changes in foreign governments' policies. This not only serves as an attraction for foreign capital looking for a secure haven; it also benefits the American work force.

Work force skills are critical. As every advanced economy becomes global, a nation's most important competitive asset becomes the skills and cumulative learning of its work force. Consequently, the most important issue with regard to global corporations is whether and to what extent they provide Americans with the training and experience that enable them to add greater value to the world economy. Whether the company happens to be headquartered in the United States or the United Kingdom is fundamentally unimportant. The company is a good "American" corporation if it equips its American work force to compete in the global economy.

Globalization, almost by definition, makes this true. Every factor of production other than work

1. Craig Smith, editor of *Corporate Philanthropy Report*, quoted in *Chronicle of Higher Education*, November 8, 1989, p. A-34.

2. Bureau of Economic Analysis, *Foreign Direct Investment in the U.S. Operations of U.S. Affiliates, Preliminary 1986 Estimates* (Washington, D.C.: U.S. Department of Commerce, 1988) for data on foreign companies; Bureau of the Census, *Annual Survey of Manufactures: Statistics for Industry Groups and Industries, 1986* (Washington, D.C., 1987) for U.S. companies.

force skills can be duplicated anywhere around the world. Capital now sloshes freely across international boundaries, so much so that the cost of capital in different countries is rapidly converging. State-of-the-art factories can be erected anywhere. The latest technologies flow from computers in one nation, up to satellites parked in space, then back down to computers in another nation—all at the speed of electronic impulses. It is all fungible: capital, technology, raw materials, information—all, except for one thing, the most critical part, the one element that is unique about a nation: its work force.

In fact, because all of the other factors can move so easily any place on earth, a work force that is knowledgeable and skilled at doing complex things attracts foreign investment. The relationship forms a virtuous circle: well-trained workers attract global corporations, which invest and give the workers good jobs, the good jobs, in turn, generate additional training and experience. As skills move upward and experience accumulates, a nation's citizens add greater and greater value to the world—and command greater and greater compensation from the world, improving the country's standard of living.

Foreign-owned corporations help American workers add value. When foreign-owned companies come to the United States, they frequently bring with them approaches to doing business that improve American productivity and allow American workers to add more value to the world economy. In fact, they come here primarily because they can be more productive in the United States than can other American rivals. It is not solely America's mounting external indebtedness and relatively low dollar that account for the rising level of foreign investment in the United States. Actual growth of foreign investment in the United States dates from the mid-1970s rather than from the onset of the large current account deficit in 1982. Moreover, the two leading foreign investors in the United States are the British and the Dutch—not the Japanese and the West Germans, whose enormous surpluses are the counterparts of our current account deficit.

For example, after Japan's Bridgestone tire company took over Firestone, productivity increased dramatically. The joint venture between Toyota and General Motors at Fremont, California is a similar story: Toyota's managerial system took many of the same workers from what had been a deeply troubled GM plant and turned it into a model facility, with upgraded productivity and skill levels.

In case after case, foreign companies set up or buy up operations in the United States to utilize their corporate assets with the American work force. Foreign-owned businesses with better design capabilities,

production techniques, or managerial skills are able to displace American companies on American soil precisely because those businesses are more productive. And in the process of supplanting the American company, the foreign-owned operation can transfer the superior know-how to its American work force—giving American workers the tools they need to be more productive, more skilled, and more competitive. Thus foreign companies create good jobs in the United States. In 1986 (the last date for which such data are available), the average American employee of a foreign-owned manufacturing company earned \$32,887, while the average American employee of an American-owned manufacturer earned \$28,954.³

This process is precisely what happened in Europe in the 1950s and 1960s. Europeans publicly fretted about the invasion of American-owned multinationals and the onset of "the American challenge." But the net result of these operations in Europe has been to make Europeans more productive, upgrade European skills, and thus enhance the standard of living of Europeans.

Now Who Is Us?

American competitiveness can best be defined as the capacity of Americans to add value to the world economy and thereby gain a higher standard of living in the future without going into ever deeper debt. American competitiveness is not the profitability or market share of American-owned corporations. In fact, because the American-owned corporation is coming to have no special relationship with Americans, it makes no sense for Americans to entrust our national competitiveness to it. The interests of American-owned corporations may or may not coincide with those of the American people.

Does this mean that we should simply entrust our national competitiveness to any corporation that employs Americans, regardless of the nationality of corporate ownership? Not entirely. Some foreign-owned corporations are closely tied to their nation's economic development—either through direct public ownership (for example, Airbus Industrie, a joint product of Britain, France, West Germany, and Spain, created to compete in the commercial airline industry) or through financial intermediaries within the nation that, in turn, are tied to central banks and ministries of finance (in particular the model used by many Korean and Japanese corporations). The primary goals of such corporations are to enhance the wealth of their nations, and the standard of living of their nations' citizens, rather than to enrich their

shareholders. Thus, even though they might employ American citizens in their worldwide operations, they may employ fewer Americans—or give Americans lower value-added jobs—than they would if these corporations were intent simply on maximizing their own profits.³

On the other hand, it seems doubtful that we could ever shift the goals and orientations of American-owned corporations in this same direction—away

National policies should reward any global corporation that invests in the American work force.

from profit maximization and toward the development of the American work force. There is no reason to suppose that American managers and shareholders would accept new regulations and oversight mechanisms that forced them to sacrifice profits for the sake of building human capital in the United States. Nor is it clear that the American system of government would be capable of such detailed oversight.

The only practical answer lies in developing national policies that reward *any* global corporation that invests in the American work force. In a whole set of public policy areas, involving trade, publicly supported R&D, antitrust, foreign direct investment, and public and private investment, the overriding goal should be to induce global corporations to build human capital in America.

Trade policy. We should be less interested in opening foreign markets to American-owned companies (which may in fact be doing much of their production overseas) than in opening those markets to companies that employ Americans—even if they happen to be foreign-owned. But so far, American trade policy experts have focused on representing the interests of companies that happen to carry the American flag—without regard to where the actual production is being done. For example, the United States recently accused Japan of excluding Motorola from the lucrative Tokyo market for cellular telephones and hinted at retaliation. But Motorola designs and makes many of its cellular telephones in Kuala Lumpur, while most of the Americans who make cellular telephone equipment in the United States for export to Japan happen to work for Japanese-owned companies. Thus we are wasting our scarce political capital pushing foreign governments to reduce barriers to American-owned companies that are seeking to sell or produce in their market.

Once we acknowledge that foreign-owned Corporation B may offer more to American competitiveness than American-owned Corporation A, it is easy to design a preferable trade policy—one that accords more directly with our true national interests. The highest priority for American trade policy should be to discourage other governments from invoking domestic content rules—which have the effect of forcing global corporations, American and foreign-owned alike, to locate production facilities in those countries rather than in the United States.

The objection here to local content rules is not that they may jeopardize the competitiveness of American companies operating abroad. Rather, it is that these requirements, by their very nature, deprive the American work force of the opportunity to compete for jobs, and with those jobs, for valuable skills, knowledge, and experience. Take, for example, the recently promulgated European Community nonbinding rule on television-program production, which urges European television stations to devote a majority of their air time to programs made in Europe. Or consider the European allegations of Japanese dumping of office machines containing semiconductors, which has forced Japan to put at least 45% European content into machines sold in Europe (and thus fewer American-made semiconductor chips).

Obviously, U.S.-owned companies are already inside the EC producing both semiconductors and television programs. So if we were to adopt American-owned Corporation A as the model for America's competitive self-interest, our trade policy might simply ignore these EC initiatives. But through the lens of a trade policy focused on the American work force, it is clear how the EC thwarts the abilities of Americans to excel in semiconductor fabrication and filmmaking—two areas where our work force already enjoys a substantial competitive advantage.

Lack of access by American-owned corporations to foreign markets is, of course, a problem. But it only becomes a crucial problem for America to the extent that both American and foreign-owned companies must make products within the foreign market—products that they otherwise would have made in the United States. Protection that acts as a domestic content requirement skews investment away from the United States—and away from U.S. workers. Fighting against that should be among the highest priorities of U.S. trade policy.

Publicly supported R&D. Increased global competition, the high costs of research, the rapid rate of change in science and technology, the model of Japan

3. Robert B. Reich and Eric D. Mankin, "Joint Ventures with Japan Give Away Our Future," *HBR* March-April 1986, p. 78.

with its government-supported commercial technology investments—all of these factors have combined to make this area particularly critical for thoughtful public policy. But there is no reason why preference should be given to American-owned companies. Dominated by our preoccupation with American-owned Corporation A, current public policy in this area limits U.S. government-funded research grants, guaranteed loans, or access to the fruits of U.S. government-funded research to American-owned companies. For example, membership in Sematech, the research consortium started two years ago with \$100 billion annual support payments by the Department of Defense to help American corporations fabricate complex memory chips, is limited to American-owned companies. More recently, a government effort to create a consortium of companies to catapult the United States into the HDTV compe-

Should Sony, Philips, and Thomson be eligible to participate in the HDTV consortium—with their American workers?

tion has drawn a narrow circle of eligibility, ruling out companies such as Sony, Philips, and Thomson that do R&D and production in the United States but are foreign-owned. More generally, long-standing regulations covering the more than 600 government laboratories and research centers that are spread around the United States ban all but American-owned companies from licensing inventions developed at these sites.

Of course, the problem with this policy approach is that it ignores the reality of global American corporations. Most U.S.-owned companies are quite happy to receive special advantages from the U.S. government—and then spread the technological benefits to their affiliates all over the world. As Sematech gets under way, its members are busily going global. Texas Instruments is building a new \$250 million semiconductor fabrication plant in Taiwan; by 1992, the facility will produce four-megabit memory chips and custom-made, application-specific integrated circuits—some of the most advanced chips made anywhere. TI has also joined with Hitachi to design and produce a super chip that will store 16 million bits of data. Motorola, meanwhile, has paired with Toshiba to research and produce a similar generation of futurist chips. Not to be outdone, AT&T has a commitment to build a state-of-the-art chip-

making plant in Spain. So who will be making advanced chips in the United States? In June 1989, Japanese-owned NEC announced plans to build a \$400 million facility in Rosedale, California for making four-megabit memory chips and other advanced devices not yet in production anywhere.

The same situation applies to HDTV. Zenith Electronics is the only remaining American-owned television manufacturer, and thus the only one eligible for a government subsidy. Zenith employs 2,500 Americans. But there are over 15,000 Americans employed in the television industry who do not work for Zenith—undertaking R&D, engineering, and high-quality manufacturing. They work in the United States for foreign-owned companies: Sony, Philips, Thomson, and others (see the accompanying table). Of course, none of these companies is presently eligible to participate in the United States's HDTV consortium—nor are their American employees.

Again, if we follow the logic of Corporation B as the more "American" company, it suggests a straightforward principle for publicly supported R&D: we should be less interested in helping *American-owned companies* become technologically sophisticated than in helping *Americans* become technologically sophisticated. Government-financed help for research and development should be available to any corporation, regardless of the nationality of its owners, as long as the company undertakes the R&D in the United States—using American scientists, engineers, and technicians. To make the link more explicit, there could even be a relationship between the number of Americans involved in the R&D and the amount of government aid forthcoming. It is important to note that this kind of public-private bargain is far different from protectionist domestic content requirements. In this case, the government is participating with direct funding and thus can legitimately exact a quid pro quo from the private sector.

Antitrust policy. The Justice Department is now in the process of responding to the inevitability of globalization; it recognizes that North American market share alone means less and less in a global economy. Consequently, the Justice Department is about to relax antitrust policy—for American-owned companies only. American-owned companies that previously kept each other at arm's length for fear of prompting an inquiry into whether they were colluding are now cozying up to one another. Current antitrust policy permits research joint ventures; the attorney general is on the verge of recommending that antitrust policy permit joint production agreements as well, when there may be significant economies of scale and where competition is global—again, among American-owned companies.

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But here again, American policy seems myopic. We should be less interested in helping American-owned companies gain economies of scale in research, production, and other key areas, and more interested in helping corporations engaged in research or production within the United States achieve economies of scale—regardless of their nationality. U.S. antitrust policy should allow research or production joint ventures among any companies doing R&D or production within the United States, as long as they can meet three tests: they could not gain such scale efficiencies on their own, simply by enlarging their investment in the United States; such a combination of companies would allow higher levels of productivity within the United States; and the combination would not substantially diminish global competition. National origin should not be a factor.

Foreign direct investment. Foreign direct investment has been climbing dramatically in the United States: last year it reached \$329 billion, exceeding total American investment abroad for the first time since World War I (but be careful with these figures, since investments are valued at cost and this substantially understates the worth of older invest-

ments). How should we respond to this influx of foreign capital?

Clearly, the choice between Corporation A and Corporation B has important implications. If we are most concerned about the viability of American-owned corporations, then we should put obstacles in the way of foreigners seeking to buy controlling shares in American-owned companies, or looking to build American production facilities that would compete with American-owned companies.

Indeed, current policies tilt in this direction. For example, under the so-called Exon-Florio Amendment of the Omnibus Trade and Competitiveness Act of 1988, foreign investors must get formal approval from the high-level Committee on Foreign Investments in the United States, comprising the heads of eight federal agencies and chaired by the secretary of the treasury, before they can purchase an American company. The expressed purpose of the law is to make sure that a careful check is done to keep "national security" industries from passing into the hands of foreigners. But the law does not define what "national security" means; thus it invites all sorts of potential delays and challenges. The actual effect is

U.S. TV Set Production, 1988

Company Name	Plant Type	Location	Employees	Annual Production
Bang & Olufsen	Assembly	Compton, Calif.	n.a.*	n.a.
Goldstar	Total*	Huntsville, Ala.	400	1,000,000
Harvey Industries	Assembly	Athens, Tex.	900	600,000
Hitachi	Total	Anaheim, Calif.	900	360,000
JVC	Total	Elmwood Park, N.J.	100	480,000
Matsushita	Assembly	Franklin Park, Ill.	800	1,000,000
American Kotobuki (Matsushita)	Assembly	Vancouver, Wash.	200	n.a.
Mitsubishi	Assembly	Santa Ana, Calif.	550	400,000
Mitsubishi	Total	Braselton, Ga.	300	285,000
NEC	Assembly	McDonough, Ga.	400	240,000
Onon	Assembly	Princeton, Ind.	250	n.a.
Philips	Total	Greenville, Tenn.	3,200	2,000,000+
Samsung	Total	Saddle Brook, N.J.	250	1,000,000
Sanyo	Assembly	Forrest City, Ark.	400	1,000,000
Sharp	Assembly	Memphis, Tenn.	770	1,100,000
Sony	Total	San Diego, Calif.	1,500	1,000,000
Tatung	Assembly	Long Beach, Calif.	130	17,500
Thomson	Total	Bloomington, Ind.	1,766	3,000,000+
Thomson	Components	Indianapolis, Ind.	1,604	n.a.
Toshiba	Assembly	Lebanon, Tenn.	600	900,000
Zenith	Total	Springfield, Mo.	2,500	n.a.

* Total manufacturing involves more than the assembling of knocked-down kits. Plants that manufacture just the television cabinets are not included in this list. *Not available.

Source: Electronic Industries Association, HDTV Information Center, Washington, D.C.

to send a message that we do not look with favor on the purchase of American-owned assets by foreigners. Other would-be pieces of legislation send the same signal. In July 1989, for instance, the House Ways and Means Committee voted to apply a withholding capital gains tax to foreigners who own more than 10% of a company's shares. Another provision of the committee would scrap tax deductibility for interest on loans made by foreign parents to their American subsidiaries. A third measure would limit R&D tax credits for foreign subsidiaries. More re-

The federal government has been cutting back on the investments that are critical for America's competitive future.

cently, Congress is becoming increasingly concerned about foreign takeovers of American airlines. A subcommittee of the House Commerce Committee has voted to give the Transportation Department authority to block foreign acquisitions.

These policies make little sense—in fact, they are counterproductive. Our primary concern should be the training and development of the American work force, not the protection of the American-owned corporation. Thus we should encourage, not discourage, foreign direct investment. Experience shows that foreign-owned companies usually displace American-owned companies in just those industries where the foreign businesses are simply more productive. No wonder America's governors spend a lot of time and energy promoting their states to foreign investors and offer big subsidies to foreign companies to locate in their states, even if they compete head-on with existing American-owned businesses.

Public and private investment. The current obsession with the federal budget deficit obscures a final, crucial aspect of the choice between Corporation A and Corporation B. Conventional wisdom holds that government expenditures "crowd out" private investment, making it more difficult and costly for American-owned companies to get the capital they need. According to this logic, we may have to cut back on public expenditures in order to provide American-owned companies with the necessary capital to make investments in plant and equipment.

But the reverse may actually be the case—particularly if Corporation B is really more in America's competitive interests than Corporation A. There are a number of reasons why this is true.

First, in the global economy, America's public expenditures don't reduce the amount of money left

over for private investment in the United States. Today capital flows freely across national borders—including a disproportionately large inflow to the United States. Not only are foreign savings coming to the United States, but America's private savings are finding their way all over the world. Sometimes the vehicle is the far-flung operations of a global American-owned company, sometimes a company in which foreigners own a majority stake. But the old notion of national boundaries is becoming obsolete. Moreover, as I have stressed, it is a mistake to associate these foreign investments by American-owned companies with any result that improves the competitiveness of the United States. There is simply no necessary connection between the two.

There is, however, a connection between the kinds of investments that the public sector makes and the competitiveness of the American work force. Remember: a work force that is knowledgeable and skilled at doing complex things attracts foreign investment in good jobs, which in turn generates additional training and experience. A good infrastructure of transportation and communication makes a skilled work force even more attractive. The public sector often is in the best position to make these sorts of "pump priming" investments—in education, training and retraining, research and development, and in all of the infrastructure that moves people and goods and facilitates communication. These are the investments that distinguish one nation from another—they are the relatively nonmobile factors in the global competition. Ironically, we do not ordinarily think of these expenditures as investments; the federal budget fails to distinguish between a capital and an operating budget, and the national income accounts treat all government expenditures as consumption. But without doubt, these are precisely the investments that most directly affect our future capacity to compete.

During the 1980s, we allowed the level of these public investments either to remain stable or, in some cases, to decline. As America enters the 1990s, if we hope to launch a new campaign for American competitiveness, we must substantially increase public funding in the following areas:

☐ **Government spending on commercial R&D.** Current spending in this critical area has declined 95% from its level two decades ago. Even as late as 1980, it comprised .8% of gross national product; today it comprises only .4%—a much smaller percentage than in any other advanced economy.

☐ **Government spending to upgrade and expand the nation's infrastructure.** Public investment in critical highways, roads, bridges, ports, airports, and waterways dropped from 2.3% of GNP two decades ago to

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1.3% in the 1980s. Thus many of our bridges are unsafe, and our highways are crumbling.

□ *Expenditures on public elementary and secondary education.*

These have increased, to be sure. But in inflation-adjusted terms, per pupil spending has shown little gain. Between 1959 and 1971, spending per student grew at a brisk 4.7% in real terms—more than a full percentage point above the increase in the GNP—and teachers' salaries increased almost 3% a year. But since then, growth has slowed. Worse, this has happened during an era when the demands on public education have significantly increased, due to the growing incidence of broken homes, unwed mothers, and a rising population of the poor. Teachers' salaries, adjusted for inflation, are only a bit higher than they were in 1971. Despite the rhetoric, the federal government has all but retreated from the field of education. In fact, George Bush's 1990 education budget is actually smaller than Ronald Reagan's in 1989. States and municipalities, already staggering under the weight of social services that have been shifted onto them from the federal government, simply cannot carry this additional load. The result of this policy gap is a national education crisis: one out of five American 18-year-olds is illiterate, and in test after test, American schoolchildren rank at the bottom of international scores. Investing more money here may not be a cure-all—but money is at least necessary.



□ *College opportunity for all Americans.* Because of government cutbacks, many young people in the United States with enough talent to go to college cannot afford it.

During the 1980s, college tuitions rose 26%, family incomes rose a scant 5%. Instead of filling the gap, the federal government created a vacuum: guaranteed student loans have fallen by 13% in real terms since 1980.

□ *Worker training and re-training.* Young people who cannot or do not wish to attend college need training for jobs that are becoming more complex. Older workers need re-training to keep up with the demands of a rapidly changing technologically advanced workplace. But over the last eight years, federal investments in worker training have dropped by more than 50%.

These are the priorities of an American strategy for national competitiveness—a strategy based more on the value of human capital and less on the value of financial capital. The simple fact of American ownership has lost its relevance to America's economic future. Corporations that invest in the United States, that build the value of the American work force, are more critical to our future standard of living than are American-owned corporations investing abroad. To attract and keep them, we need public investments that make America a good place for any global corporation seeking talented workers to set up shop.

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Representative HAMILTON. Thank you very much, Mr. Reich. We will go to Mr. Prestowitz.

STATEMENT OF CLYDE PRESTOWITZ, DIRECTOR, ECONOMIC STRATEGY INSTITUTE, WASHINGTON, DC

Mr. PRESTOWITZ. Thank you, Mr. Chairman. I have a prepared statement for the record. I would just like to make a few points at this moment.

Let's begin with the departure point of Bob Reich; namely, the question of national treatment. The standard of national treatment has, of course, been a pillar of the GATT and the international system since the late 1940's. And, I believe that that is precisely the problem.

The standard asserts that we, the United States, will treat foreign companies in the United States as we treat American companies provided that our foreign partners will treat American companies as they treat their own. Now, on the surface that sounds fair and square. I treat your companies the way I treat my own; you treat my companies the way you treat your own. What could be fairer than that?

The problem is that it assumes that the national treatment of various countries is more or less similar. And, at the time that the standard was established and the GATT was negotiated, that was largely the case. The founding members of the GATT were the United States, the West European countries, and Canada.

And, national treatment in the United States and Canada and in the United Kingdom and Holland was more or less the same. And, so it was more or less an equal standard.

The difficulty has arisen as we have added to the international system countries whose concepts of national treatment are substantially different. The national treatment of Korea is very different from the national treatment of the United States.

And, the difficulty is that under this asymmetry of national treatments, the most open and liberal society is automatically disadvantaged. Foreign investors, Korean investors, for example, French investors, Brazilian investors, in the United States are treated as American citizens with all the rights and privileges pertaining thereto.

They can come here and lobby. They can attend markup sessions. They can get injunctions in the courts. They can file antitrust suits. They can do everything that you and I can do.

But, the reverse is not the case. American corporations and citizens operating in Korea or some of these other countries cannot do those things.

And, so the result is that effectively we have established a system in which foreign investors in the United States are able to take advantage of the U.S. market to achieve market share, to achieve economies of scale, while American companies are faced with restrictions that make it more difficult to do that abroad.

I believe that this weakness or contradiction in the concept of national treatment is a fundamental flaw in the current trade system and accounts for much of the trade friction and lies at the heart of the demise of the GATT.

But, having said that, the real question then arises with regard to how we should consider foreign investment in the United States in light of these differences. Now, I think it's important to say at the outset that the question should not be posed in absolute terms. It should not be a question of whether foreign investment is good or bad.

Clearly, investment can be either good or bad. And, again this is a concept that I think runs counter to conventional wisdom in the United States.

The premise at this moment in American policy is that foreign investment is an unalloyed good, that it creates jobs, that it brings new management techniques, that it brings transfers of technology, that these are all things we want and, therefore, we should welcome it. Now, the truth is that foreign investment may do those things.

There are certainly many instances of foreign corporations which have, in fact, created jobs in the United States, which have, in fact, transferred technology to the United States and which have, in fact, contributed to the economic welfare of the United States. But, there are also examples of the opposite.

Investment can be used as a predatory tool. You can buy your competitor and close him down. You can buy your competitor and transfer his technology out of the United States. You can engage in collusive activities to destroy domestic industries.

So, the point is that investment per se is neither a good nor a bad. The question is the behavior of the investor.

And, that then leads to a question of whether some kinds of investors or certain nationalities of investors behave differently than others. And, it also leads to the question of, in light of the possibility of that kind of two-sided behavior, whether there should be any concern with what happens to American companies.

Now, I would argue that while it's true that the investment and the operations of American companies overseas are large and expanding, and while it's true that the operations of foreign companies in the United States are large and expanding, the fact is that today and for the foreseeable future the vast bulk of Americans are going to be working in American companies, companies that are owned and controlled by Americans and for whom the American market is the single biggest market.

And, therefore, while I think that Bob Reich is correct when he says that we need to be concerned about the skills of our work force and the productivity of our work force, the question I ask is, how do we as a practical matter express that concern? The skills of our work force and its productivity are primarily going to be determined in an American company.

And, if we want our work force to be at the leading edge of technology, to have high wage jobs, to be doing sophisticated high value added, high technology research and development and manufacturing, sophisticated service operations which justify high wages, then the bulk of those activities is going to take place in American companies. And, that means, it seems to me, that we cannot be neutral or unconcerned about what happens to U.S. companies.

Now, that's not to say that Engine Charlie was correct. Engine Charlie wasn't correct in 1955, and he's not correct today.

What is good for any particular American company is not necessarily what is good for the United States. On the other hand, in order for the United States to achieve its economic objectives, there has to be some environment in the United States and a policy framework which makes it possible for American companies to raise the skills of their work force and to achieve the productivity and performance that we desire.

Now, in that context, it seems to me the question with regard to our consideration of foreign corporations is this: If a foreign corporation is creating net employment, net new employment, in the United States, if it is transferring technology to the United States, developing significant new technology in the United States, commercializing it in the United States, if it is adding net productive capacity to the United States, if it is doing that without attempting to manipulate American political processes, if it is doing that without diminishing American international independence of action, clearly that's good. And, clearly we should want that.

We should welcome that. And, those kinds of investors and corporations should be woven into the fabric of the American economy.

On the other hand, there are instances where it doesn't work that way. A number of foreign countries have active industrial policies. That means that their governments work in cooperation with their companies to achieve specific industrial objectives. And, historically, many of those industrial objectives have been overtly aimed at overcoming American leadership and displacing American positions in major international markets and major technologies.

Now, if we are dealing with a situation in which a foreign investor is actively engaged in that kind of policy environment at home, then the kind of response, the kind of incentives that we make available in the United States, the kind of treatment that we make available in the United States, it seems to me is something that we ought to look at much more carefully.

Or, let's think of it in another way. Today is Wednesday. A few hours ago, the Hokosui guy had its monthly meeting in downtown Tokyo. What is the Hokosui guy? It is the White Water Club of the Sumitomo group. The White Water Club of the Sumitomo group consists of the 21 chief executives of the leading Sumitomo group. The 21 companies include Mazda, NEC, Sumitomo banks, and Sumitomo Chemical.

Now, this is a meeting that would not take place in the United States. Imagine that John Reed of Citibank called a meeting tomorrow of the Citibank Club in New York and imagine that John Akers, the chairman of IBM, and Bob Malott, the chairman of FMC, and 16 or 17 other similar caliber executives, all owning shares in each other's companies, all having Citibank as their lead bank, all having Citibank as their major shareholder, were to meet in New York tomorrow to discuss group strategy. It would never happen.

The Justice Department would have a heart attack. And, if it didn't, the corporate counsel of those corporations would.

But, that meeting took place a few hours ago in Tokyo. And, similar meetings take place, not only in Tokyo but in Seoul and in many other countries around the world.

Now, the behavior of those kinds of investors is determined in accordance with rules and contexts which are not only very different from the United States but in many cases at odds with the kind of behavior that we feel is desirable. In fact, recently an MITI official of Japan's Fair Trade Commission made the statement that most of the traditional business practices of Japan are contrary to their antitrust laws.

Now you can say, "Well, but as long as they are operating in the United States, we have the Justice Department and they have to abide by American law." But, the fact of the matter is, it is much more difficult for the U.S. Government to influence or to impose its will on these kinds of practices.

We run into the problem of the tradeoff of American economic interests with foreign policy. I remember back in the early 1980's the famous Houdaille machine tool kits. There was a cartel of machine tool operators, companies operating in Japan. Nobody contested that there was a cartel. There was a cartel.

But, the argument was made that the cartel was outside the borders of the United States, consisted of only Japanese companies; in any case, we have a relationship with Japan that is of overriding importance; and, therefore, we should do nothing about these cartel and cartel-like practices.

And, so as a practical matter, we find that there is the possibility of the extension into the United States of kinds of behavior which are at odds with what we desire.

Finally, I think that while it's important to again emphasize that many foreign companies make very positive contributions to the United States, there is also a numbers game that goes on. And, there is also I think a kind of irony taking place, which we should be at pains to avoid.

In this discussion, recently the point of television manufacture has been mentioned many times. In fact, Mr. Reich mentioned this morning that while there aren't very many American companies making television sets in the United States, there are a lot of foreign companies making television sets in the United States.

Now, the impression is given that they are making television sets. And, in fact, a list has been adduced listing all of the companies that make television sets in the United States. I have this list in front of me, and as I go down it, it notes whether they are doing assembly or total production. And, some of them are doing only assembly, but many of them are listing their operations as total production.

But, listen to these numbers. In Greenville, TN, Philips, North American Philips, a Dutch company, is producing 2 million television sets a year, and it employs 3,200 people. In Huntsville, AL, Goldstar is producing a million television sets a year and it's employing 400 people.

Both companies are listed as doing total production in the United States. But, with those ratios, either Philips is incredibly inefficient or Goldstar is doing a kind of manufacturing that Philips is not doing.

The fact of the matter is that if you ask the Electronic Industry Association, which is the source of these numbers, what they mean by total production, they say anything beyond the assembly of knock-down kits. So, if you add a screwdriver or a nut or a bolt beyond the simple assembly of a knock-down kit, that's called total production.

Clearly, what Philips is doing in Tennessee makes a very different kind of contribution than what Goldstar is doing in Huntsville, AL. And, for us to confuse those two is to, I think, simply misperceive the situation and put ourselves in the position of possibly harming our own interests.

Second, I think that it's important to make another point. And, that is that the television industry, the American television industry, was largely destroyed in significant part as a result of predatory collusive activity.

And, this is not even an American opinion. Japan's Fair Trade Commission convicted the Japanese electronics industry of collusive violation of Japan's own antitrust and anti-price-fixing rule. The U.S. Treasury Department found dumping and the U.S. courts found customs fraud in the case of the television industry.

Now, we have a situation in which as a result of predatory collusive activity, a major American industry was largely destroyed. Subsequently, some of the companies who engaged in the collusive activity put a few assembly plants in the United States, and we are then told that we should welcome this as a contribution to American employment and value added and that we should think of these people as being the same as the people they destroyed.

Now, I don't want to push this too far. But, I think clearly what we have to do is to make some distinctions.

We cannot, we should not, take the position that we are against the foreign investors or that all foreign companies are somehow less desirable than all American companies. On the other hand, we should not confuse ourselves by thinking that we need not be concerned with the welfare of American companies, nor should we confuse ourselves with the view that the behavior of all corporations is more or less the same, they are all international corporations, they all respond to the same environments and the same motivations, and they are all the same. They are not all the same.

Thank you.

[The prepared statement of Mr. Prestowitz follows:]

PREPARED STATEMENT OF CLYDE PRESTOWITZ

Who Is Us?--Does Corporate Nationality Matter?

In inquiring into the significance of corporate nationality, we must first consider our economic objectives as a nation. Part of the reason why the Who Is Us is so perplexing to Americans while being an open and shut case in many other nations is that we really do not have economic objectives beyond the very general ones of full employment, low inflation, and rising (if slowly) living standards. Indeed, American economic orthodoxy really argues that we should not have other than very general objectives. The premise of American economic conventional wisdom is that what we make is not important so long as we make enough to keep everyone employed. This view is best captured in a statement recently attributed to the chairman of the Council of Economic Advisers to the effect that: "computer chips, potato chips. What is the difference. They are all chips." In other words we should be indifferent as to whether our economy produces computer chips or potato chips.

If it is indeed true that we should not care what we make: that we do not believe the composition of our economy has anything to do with its productivity; and that we are unconcerned with the national security implications of potato chips and computer chips, then corporate nationality may be of little significance.

But, economists to the contrary notwithstanding, most Americans do care about what we as a nation produce. If our objectives are, as I believe they should be, to achieve and maintain industrial, technological, and financial leadership; to create a highly skilled labor force that justifies high wages; to make the United States the preferred location for sophisticated, high value added economic activity; and to keep U.S. living standards rising as fast or faster than those in other leading countries, then corporate behavior and, perhaps, corporate nationality are important.

At the moment, and for the foreseeable future, the bulk of Americans will be employed by companies that are owned and managed primarily by Americans and for which the United States is the single most important market. If we want Americans to have the skills and capabilities noted above, we cannot be indifferent to the performance of American companies. We must therefore pursue domestic and international economic policies that encourage American corporations to make the investments and adopt the policies that will result in the desired performance capabilities.

Let's look at a concrete example. At the moment Cray Research is the world leader in the super computer market in terms of both technology and market share. Most people would

agree that this state of affairs is both economically and strategically beneficial to the United States. But Crav's position is under attack by several Japanese corporations operating in the context of Japanese government programs specifically aimed at overtaking Crav's lead. Theoretically it might be possible to argue that we as a nation should be unconcerned with the fate of Crav in these circumstances because even if it fails the Japanese will invest in the United States and Americans will maintain the desired skill levels and technological capabilities with no loss other than to the shareholders of Crav who can offset their loss by buying shares in the Japanese companies.

But this depends upon two assumptions. One is that the Japanese investment will take place and that it will duplicate in sophistication and extent that of Crav. The other is that there will be no time lag and no withering of U.S. capabilities while this investment is taking place. On top of this it is also assumed that the investment will occur without the benefit of any particular inducements in the United States. All of these assumptions are questionable. Companies at the leading edge of technology do not frequently duplicate their major research facilities in several locations. Inevitably there is a lag. The decline of the U.S. television industry was not followed by an immediate rush of Japanese production in the United States. In that period of decline American capabilities withered. For an American engineer who wishes to build leading edge television sets there simply are a lot fewer places to go than there used to be. Finally, the foreign investment is likely to come to the United States only if fears to trade friction force it or if conditions in the U.S. market are more favorable than at home. In the case of a country that pursues industry targeting policies, the United States could only make conditions more favorable by offering counter incentives, but if one is going to offer these to foreign companies, why not offer them to American companies. Thus, as a practical matter, we cannot really be indifferent about the fate of American corporations.

Does this mean that we should bar foreign investors and corporations? Not for a minute. Saying that we have a legitimate concern for what happens to American companies is not to say that we should be anti-foreign. Far from it. Foreign investors and corporations have, do, and will continue to enrich American life. When foreign corporations transfer technology to the United States and create net new employment; when they improve American skills and raise productivity; and when they do this without attempting to manipulate our domestic political processes or without diminishing our international independence of action, then

they contribute greatly to American welfare and should be welcomed. The more the better.

However, there is an influential fallacy at work in Washington today. It is that all foreign investment is a good thing and that it is somehow xenophobic or chauvinistic to raise any questions about such investment or investors. Indeed, this is the premise of official U.S. government policy on foreign investment. The truth is that foreign investment per se is neither good nor bad. If it does the above it can be a tremendous good. But it doesn't have to be. Foreign investment can result in closure of plants as well as plant openings. It can be done to transfer technology out of the United States as well as for purposes of transferring it in. Investment can be in screwdriver factories just as easily as in sophisticated manufacturing. Thus the real question is not foreign investment, but the behavior of the investor and the context of his investment.

The United States should not discriminate or in any way inhibit positive foreign investment. Rather we should welcome it and weave it into the fabric of our society. On the other hand there are a number of circumstances with regard to which we should be wary in devising our policies. First, a number of foreign countries conduct active industrial policies which involves cooperation between industry and government in achieving specific industrial and technological objectives which often involve displacing American leadership positions. Investors from such industries are not involved in normal market competition and should be treated accordingly. Second, we must not lose sight of the fact that many foreign companies are organized in cartels or quasi cartels or are actually state owned and thus often instruments of state policy. To the extent that such investors are likely to operate in ways incompatible with American traditions and principles, we must consider how to protect our interests.

Third, we must be prepared to make important distinctions. For example, recent commentary on this issue has involved a list of television manufacturers in the United States and the status of their activity. The list says that most of the manufacturers are engaged in full production of TV sets in the United States. But closer examination reveals that while Philips requires 3200 employees to produce two million sets, Goldstar needs only 400 workers to turn out a million sets. Either Philips is awfully inefficient or Goldstar is not doing the same kind of manufacturing and making the same-kind of contribution to the U.S. economy as Philips. The United States should not view these operations as equally desirable.

Fourth, we must not reward predation in the guise of beneficial investment. The television industry is a good example. The American industry was deeply wounded by actions which Japan's own FTC found to be collusive and predatory. As a result the American industry shrank with large loss of employment. We should not now be in the position of rewarding the predators by welcoming them as saviors because they decide to throw a few low skill assembly jobs our way.

This brings us to the final point. What about U.S. industry? Are its interests identical with American interests? Can we assume that U.S. based companies will always do what is in the overall national interest? The answer is, of course, no. It is not reasonable to expect them to do so. Rather we need to adopt policies that ensure that they do act in the national interest. At the same time, we must understand that investment by U.S. corporations in overseas markets may well be in the national interest. In order to ensure vitality in domestic U.S. operations, particularly in global markets with learning curve effects, it may be absolutely critical to maintain leadership in foreign markets and that may require investment in those markets.

Again the question is not whether investment is good or bad but rather what is its objective and context.

Representative HAMILTON. Thank you, Mr. Prestowitz. Mr. Cohen, please proceed.

**STATEMENT OF STEPHEN S. COHEN, PROFESSOR AND DIRECTOR,
BERKELEY ROUNDTABLE ON THE INTERNATIONAL ECONOMY
(BRIE), UNIVERSITY OF CALIFORNIA AT BERKELEY**

Mr. COHEN. Thank you, Congressman Hamilton, Congressman Scheuer. I've left a complete copy of the prepared statement for inclusion in the record.

I actually prepared a small list of a dozen proofs, I call it, of the existence of US and some other observations that correspond in number to the fact that the age of the global corporation is not upon us, not quite yet. So, if you would permit me to run through the list at breakneck speed, or at least as far as we can go in a few minutes, it might help to structure some subsequent discussions.

First, as a general assertion, I think we have to reject the assertion that corporate nationality does not matter. An Iraqi corporation running oil transportation might give us pause, or running television stations or running newspapers.

Obviously, as a general rule, it can't be upheld. There will necessarily be exceptions, and, the list gets really long.

Similarly, ownership—and here I agree with Bob Reich's first statement: ownership is not really the question in the sense of who gets the dividends. The issue, more precisely, is control. But, the two are related; ownership is still related to control.

We are not, I think, in any position to update and internationalize the old Berle-Means argument of the total divorce between ownership and control. It hasn't yet happened. I think the results of the Wall Street takeover binge of the last few years gives us pretty good evidence to say that ownership can matter in the behavior of a company, even a large one.

This, I think, raises a more general question, the one that I think the committee is pondering. Should we equip ourselves with the capability to analyze the meaning, for American national objectives, of critical direct foreign investments and also equip ourselves to act flexibly, either to encourage, to discourage, or perhaps to harmonize those investments with our national objectives? This presents one alternative. Or, should we instead feel compelled to promulgate a simple, universal, automatic rule that deals with foreign investment?

I think the automatic approach of deliberate ignorance and impotence is not in the interest of this nation. Other nations such as Japan and most of the European states do not think such an approach is in their interests. They have created a capacity to monitor, analyze, and influence the international investments that shape the structure of their economies. We should do the same. The first step toward doing that is having the capacity to analyze what is going on. Otherwise, we are impotent.

Furthermore, there is a whole list of reasons for not having the absolute universal rule. I will go through some.

The first one is very simple. The problem is not universal in scope and invariable in form. It's really rather narrow in scope and depends on particular circumstances for meaning. In substantive

terms, we are not very much concerned with investments coming from all nations into all industries, but with direct investment into the United States, mostly by companies of Japanese and Western European nationalities. And, a universal rule is not always the best way for dealing with just two places that are, moreover, quite different from one another.

Beyond that, our focus is probably going to be more on the Japanese than the European companies. In fact, it is a rather small set of Japanese keiretsu companies, rather than companies of Japanese nationality in general, that are most likely to concern us.

Finally, these concerns narrow even more to a reasonably small set of sectors and technologies. I think we are much more concerned with silicon chips than with potato chips, with real time control rather than real estate, with flat panel rather than fashion displays. When you start narrowing the focus of the problem and concern, one begins to question the utility of universal rule. Having a general, universal rule is like trying to hit a fly with a judge's gavel.

We don't yet live in the age of the global corporation, nor in what is the logical concomitant of a global corporation: a world of politically undifferentiated economic spaces. Maybe one day we will; but not for a while.

There are very few global corporations that operate indifferently worldwide. And, there are even fewer economic spaces that are unconstrained by political considerations.

Therefore, for the present, we should continue to assume a real relationship between ownership and control. We should assume that all multinational corporations are not the same. All home countries do not treat their multinationals the same, and all host countries do not de facto set the same conditions for behavior by MNC's.

There are some indicators of just how global companies actually are. If you look at the American multinationals, which are supposedly the most mature at this game, some three-fourths of their total assets are in the United States. For Japanese-based multinationals, I'd guess that well over 90 percent are still in Japan, well over 90 percent. And, you can't get too much over 90 percent in anything.

Similarly, major differences prevail in terms of the weight and role of foreign corporations in host countries. In Germany and most of Europe, foreign-based companies occupy a big place in the economy and are able to behave a lot like nationals. In Japan, they do neither.

Substantial reciprocity is needed here before we can even entertain the idea of the possibility of a global company. In this particular debate, Japan is not a trivial exception; it's one-half of everything, the other half being Europe. The rest are really very small players in this sort of game and don't usually raise questions of control and power.

Furthermore, when conditions become exceptional, multinationals, even the most global and the most venerably multinational, tend to show deference or even take orders from their home governments. There are some very famous cases. Let's name some where U.S. companies behaved this way.

In the 1960's, major American computer makers were informally instructed by our government to withdraw their cooperation from President Charles de Gaulle's proposed Force de Frappe. They did. France depended upon these good international citizens, some of which were the largest taxpayers in the country, and depended on them for critical inputs into this military product. The project failed.

De Gaulle was furious. It was a major element contributing to his decision to withdraw French troops from direct NATO command. Similar behavior was manifested by American-based multinationals in the case of the proposed European-Soviet Gas Pipeline. Again these are experienced multinationals from the least industrial policy country. Let's look at another case, this time one involving a foreign-based multinational with substantial international monopoly power in its segment.

Mineba, the Japanese ball bearing company purchased and then quite systematically closed down United States capabilities in miniature ball bearings. This is a strategic technology, and for what I presume were entirely its own corporate reasons, Mineba substantially reduced U.S. capability in that strategic technology, despite assurances to the U.S. Government in general, and to the Pentagon in particular, that it would maintain this capacity. So, ownership and nationality *de facto* can, and do matter. When one considers a foreign investment, market structure should shape that consideration. Direct investment in an industry where a very small number of firms located in one country will dominate that industry should prompt one response. Investment in an industry where 30 companies in 20 different countries produce that product should prompt a very different response.

There is another face to market structure. Some countries permit what we call a market in companies. The United States and Britain are the most prominent. You can buy an American or British company quite easily. It's an extremely rare event for someone from outside to purchase a major Japanese company.

Reciprocity in these areas should be a minimal precondition to any *carte blanche* policy by the United States for direct foreign investment. Perhaps percentage targets are easiest. That is if foreign ownership and control of manufacturing assets in country *x* reaches a certain percentage, then we can say, "All right, it's an open market." After all, the ability to purchase foreign companies is not a function of our savings rate. That's a function of how open that market is. Furthermore, if it's not open, this is an asymmetry that belies the assumptions of global corporations operating in politically unconstrained markets.

Another thought. Many multinationals behave very well in the United States. They do real research. They do real development and real production. They develop next generation product and process, and they train our people.

Because it's an honor roll of sorts, we can use names, at least some: Philips, Thomson, Kawasaki Steel, Siemens. These are but a few of the best behaved foreign-based multinationals. Why do they behave so well? In part, because they see good business interests in doing these things; in part, a very real part, because they feel they have to. There are too many political risks in doing otherwise.

Managers of foreign-based companies operating in the United States must be able to tell their bosses back home that political imperatives are forcing them to act responsibly and put R&D in this country, especially when management at home is saying: "Hey, the labor unions are yelling at us. Why are you moving the good jobs to the United States? We need them back here."

The no-policy option for the United States disarms our best friends. It removes the incentive for them to behave the way we want. And, it disarms their ability to defend themselves back home against their own protectionist forces.

Why has there been so much direct foreign investment into this country recently? If you interview companies, they say, "We want access to the market, which means we are afraid there are going to be trade barriers. We have to get in under them."

When the import quotas were put in place, the Japanese began to set up autoplants here. Tighten controls and you will heighten investment. By removing the main incentives for the behavior you want, one risks a double defeat.

Finally, let me take an area that I would call technology spillovers and linkages. It's more complicated and theoretical.

The wealth and power of a modern nation is not really due to the quality of its soils and its mineral deposits. It's much more a function of the ability of that nation to diffuse technology, in both product and process, through its industrial system and to diffuse skills and methods throughout its population more extensively and faster than the competing nations, and then to hold that advantage as long as possible and then do it again and again.

Foreign investment, as Mr. Prestowitz pointed out, can help or hinder this process. There is no general way to know which way it will go. You have to be able to differentiate among the proposed investments in terms of a broad range of contextual variables. A simple universal rule will not do. In our rapidly weakening advanced electronics industry, one should encourage joint ventures and cooperative endeavor with the European electronic companies who pose no risk of dominance in a world market.

In other areas, say, manufacturing know-how, one may very well wish to encourage in-bound Japanese investments that would diffuse the process technology.

The processes through which technology diffuses differ from country to country. It does not only diffuse through the technical literature and through markets. It diffuses through communities, through hierarchies, through organizations. And, it does this very differently in different countries.

In Silicon Valley, technology has feet. You hire two guys and you get a hold on the technology. A company has it. You buy the company. You get the technology.

In Japan, for instance, technology does not diffuse that way. You don't buy serious Japanese companies. And, luring people out of the main ones is not as easy as it is here, although it is getting easier than it was. But, it's still very difficult.

At American universities, the technology is dished out to all comers immediately. I'm not saying that either system is good or bad. But neither system will change much, because these practices

are deeply rooted in domestic social structures. No one is going to change that.

But, you have an important asymmetry here in terms of the technology diffusion that effects the role of international investments. And, I think that it is important to judge particular investments in the context of this particular and very important asymmetry.

The last reason is obviously defense. But, there is an enormous agreement and literature on that. So, I will stop at this point and hope we can take some of these issues up later.

[The prepared statement of Mr. Cohen follows:]

PREPARED STATEMENT OF STEPHEN S. COHEN

Topic of Hearings:

Who is US? -- Does Corporate Nationality Matter?"

Title of Testimony:

A Dozen Proofs of the Existence of US and an Equal Number of Observations on Why The Age of the Global Corporation is Not Yet Upon US."

1. If we must promulgate a formal, general rule that is simple in form, universal in scope and automatic in its application, we must reject the assertion that corporate nationality does not matter. If it bears at least some relationship to influence and control, of course corporate nationality matters to U.S. policy. Simple, even trivial examples make this point: imagine Iraqi Corporations, or Soviet, Libyan, South African, Cuban, (and, depending upon how things work out, Kuwaiti) corporations controlling American television stations, newspapers, airlines, oil transport companies, or any of a broad set of militarily important technologies.
2. Similarly, as my emphasis on control indicates, ownership itself is not, and should not be, the unique, defining consideration. Control, or even influence, is what matters. But the two are related. Any assertion that they are not is an effort to update and internationalize the old Berle-Means argument of the total divorce between control and ownership. The consequences of the takeover binge on Wall St. these past years should provide sufficient evidence to disprove such an assertion.
3. This raises a more general question. Should we equip ourselves with a capability to analyze the meaning, for American national objectives, of critical direct foreign investments and to act flexibly to encourage (or discourage or harmonize) them with our national objectives? Or should we instead feel compelled to promulgate such a simple, universal and automatic rule? I think the automatic approach of deliberate ignorance and impotence is not in the interests of our nation. Other nations, such as Japan and the European states, do not think that such an approach is in their interests and they have instead created a capacity to monitor, analyze and influence international investments that shape the structure of their economies. We should do the same.
4. There are many reasons for not blindfolding ourselves and trusting the shaping of our wealth and power to a simple, absolute and universal rule. In this testimony I will try to list several of them. The first one is rather simple: The problem is not universal in its scope and invariable in its form. It is narrow in scope and depends upon very particular circumstances for its meaning. In substantive terms we are concerned not with all investments coming from all nations into all industries, but with direct investment into the U.S. by companies of Japanese and Western European nationality. A universal rule is not the best way to deal with just two places, especially as they differ so much one from the other. Our concerns focus far more on the Japanese than the Europeans. Furthermore, they focus even more narrowly on a small set of Japanese Kiretsu

companies rather than companies of Japanese nationality in general. Finally, those concerns narrow to a reasonably small set of sectors and technologies: we are more concerned with silicon chips than potato chips, with real time control than with real estate, with flat panel rather than fashion displays. Legislating absolute and universal rules to deal with a situation that is so far from universal and absolute seems to me to be the wrong approach.

5. We do not yet live in the age of the "global corporation" nor, in its logical concomitant, a world of politically undifferentiated economic spaces. Perhaps one day, perhaps soon, we will. But for the moment there are very few "global corporations" and there are relatively few economic spaces unconstrained by political considerations. For the present, we should continue to assume a real relationship between ownership and control. We should assume that all MNC's are not the same; all Home countries do not treat their MNC's the same; and all Host countries do not de facto set the same conditions for behavior on all MNCs.

a) Companies are not global: American MNC's are the most mature and the closest to global. Yet Commerce Department studies indicate that about 3/4's of the total assets of American MNCs are still accounted for by the parent operations in the U.S., with similarly high proportions for sales and employment. Despite much outbound investment these past years, that proportion has not changed much. For Japanese based MNCs, I would estimate the proportion of assets at the parent operation to be well over 90%. Even by these crude numbers, there is a long way to go before companies become global.

b) The weight and role of foreign based MNC's varies dramatically from Host country to Host country. In Germany and most of Europe foreign based MNC's occupy a big place in the economy and are able to behave a lot like nationals; in Japan they do neither. Substantial reciprocity is needed here before we can entertain the notion of global companies. In this particular debate Japan is not a trivial exception to an otherwise solid general rule. It is half the game.

6. As already indicated, ownership is not the defining consideration; behavior is. But behind behavior and shaping it lie influence and control. Corporate behavior -- what companies do and don't do within a country and with that country's people -- directly determines the wealth and power of that country. Ownership, we have learned in this era of takeovers, has a non-trivial relation to influencing corporate behavior. Also, when circumstances get exceptional, even the most global of Multinationals take orders from their home governments. The example of major U.S. computer companies in France in the 1960's is instructive. Their home government (our government) informally indicated to them to withdraw critical cooperation from President de Gaulle's Force de Frappe project. The consequences were substantial. France depended upon those good international citizens for critical inputs. The project failed. De Gaulle was furious and that reaction was part of his reason for withdrawing French forces from direct NATO command. The reaction of American based MNCs to the proposed Soviet-European gas pipeline a few years ago is another instructive example. Finally, the story of Mineba, the Japanese ball bearing company, purchasing and then systematically closing down U.S. capability in miniature ball bearings for what was presumably, its own strategic reasons -- despite assurances to the contrary (to the U.S. government in general and the Pentagon in particular) -- is another example that should give pause. Ownership and nationality often can matter.

7. Market structure will shape the meaning of a major foreign investment into the U.S. and should, therefore, shape America's response to that investment. The US

response to implantation by a major foreign based MNC -- whether through the purchase of an American competitor or through a greenfield investment -- should be one thing in a case where a small number of firms, all located in one country, dominate the world industry. It should be quite different in a situation where the industry is structured by a large number of companies, located in a large number of countries.

8. Similarly, some countries seem to permit a "market in companies" while others don't. The U.S. and U.K. figure most prominently in this list. In others -- most prominently Japan -- it is an extremely rare event for a foreign company to purchase a substantial Japanese company. Reciprocity in many such areas should be a pre-condition to a laissez-faire US policy for foreign investment. We could set percentage targets for foreign owned manufacturing assets in that country. The ability of American based companies to purchase companies in particular foreign countries has little to do with rates of domestic savings. After all, US based MNCs are investing very heavily abroad. It has to do with what is covered by open market arrangements and what is not in which countries. An automatic yes to Japanese companies buying U.S. companies is an automatic acquiescence to this asymmetry that belies the assumptions of global corporations operating in politically unconstrained markets.

9. Many MNC's behave very well in the U.S. They do real research, real development, real production. They develop the next generation of product and even process. They not only create jobs, they improve the skill base of the U.S. economy. Because it is a good list, we can name some: Philips, Siemens, Thompson, Kawasaki Steel, to take only a very few, but non-trivial, examples. Why do they? In part, they find that it makes good business sense, etc. But unless they can point to some potential imperatives from the U.S. side for investing in R&D here and not at home, they will come under great pressure from their home governments not to "export jobs and R&D activities". The no-policy option for U.S. policy deprives our best friends of both the incentives to behave well, and the ammunition to deal with protectionist forces at home.

10. Why are we the object of so much DFI? Despite classical theories of comparative advantage, which in a world of politically unconstrained economic spaces should determine locational decisions for MNCs, most MNC's invest strategically. Their first consideration in foreign investment in rich countries is market access. The realities of limitations to access, and often more important the prospect of further limitations, have been a major cause in the recent wave of new foreign direct investment in U.S. manufacturing. The prospect of behavioral norms -- abolition of "screwdriver" plants -- has been the most important incentive for upgrading the value added and the skill content of foreign activities in the U.S. This is equally true in Europe: witness the behavior of U.S. semiconductor makers these past two years in Europe. This is far from an ideal situation. But absent an international agreement abolishing all constraints on trade and investment -- one that actually works in behavioral terms -- we should not ignore this reality.

11. Technology -- spillovers, linkages and predation. These are more complicated issues, and there is inadequate time in this presentation to develop these ideas properly. In sketch form we can say:

In the modern world a nation's wealth and power is due much less to its natural endowment of minerals and soils than to its ability to diffuse new technology, both product and process, throughout its industrial system and to

diffuse new skills and methods throughout its population quicker and more extensively than competing nations, and to hold that relative advantage as long as possible. Then to do it again. And again.

Direct foreign investment can help or hinder that process. There is no a priori way to know which way it will cut. Everything depends upon the particular circumstances of the particular investment.

Some industries and technologies are particularly important carriers of innovation. New materials, biotechnology, optoelectronics, micro-manufacturing, semiconductors are some well known and important examples. In these cases, as in cases of world industrial structure, careful attention should be paid to major foreign investments, especially those that might either reduce potential competition in that technology or in its upstream or downstream uses, or that might short circuit the U.S. domestic diffusion process. Here, there is no substitute for well informed judgement. A universal rule will not do. For example, a strong foreign company that is nationally independent from a national grouping that threatens to dominate the industry might be an excellent solution. Examples would include fostering cooperation with major European producers in our threatened advanced electronics sector. Similarly we may well wish to encourage Japanese investments into the U.S. where U.S. partners and/or U.S. nationals would benefit from a transfer of Japanese production technology.

If all technologies diffused through scientific literature and through commercial markets, and those markets worked well, than national boundaries would have no impact on where technology diffuses and at what pace. But they do not diffuse that way. Technology diffuses through communities, through hierarchies, through organizations as well as through markets and formal professional literatures. In different countries this all-important diffusion process takes different forms and operates through different channels. In Silicon valley, technology diffuses as people change jobs; one can hire the technology. A good deal of what is interesting in commercial technology in the U.S. is developed in small and medium sized companies; one can buy them. In American universities the latest in technology is provided to all comers. None of these channels is particularly important in Japan, where technology tends to stay in large corporate groups until it comes out as product. Most European nations are closer to the U.S. than the Japanese model.

These fundamental differences in the institutional structures of the two countries do not represent differences of "goodness and badness"; furthermore, neither side seems willing to change such fundamental structures. But the asymmetry has enormous consequences. It is into this critical asymmetry that foreign investment enters and must be judged.

12. Defense and Information Media: There is a large consensus that national defense has its own special concerns. There is also substantial agreement extending back many years that control of national information media such as TV stations and newspapers should also be subject to special concerns and restrictions.

- There is also an excellent literature on the defense issue. The most recent piece that I have seen is the Report of the Defense Science Board Task Force on Foreign Ownership and Control of U.S. Industry of June 1990. It covers these questions, from a national defense viewpoint quite well.

Representative HAMILTON. Thank you very much, gentlemen, for your excellent statements.

I guess a major focus in this Congress and the country is how we improve our national competitiveness. And, the question you are raising for us today is, we don't know who we are. Who is us, as you put it, Mr. Reich. That certainly complicates the debate and makes it more difficult for us as policymakers and Members of the Congress.

It seems to me, as I listened to you, one of the major differences is your perception of whether or not the global village is actually with us, whether or not we do have stateless companies or borderless economies.

And, you are saying, Mr. Cohen, that corporate nationality does matter. Mr. Reich, as I understand you, you are saying that it doesn't matter so much, right?

Mr. REICH. Congressman, I am saying it matters less and less. I gather the other panelists—I haven't heard any disagreement—

Representative HAMILTON. You are not making the assertion that corporate nationality does not matter?

Mr. REICH. No. But, the trend we are on suggests that it matters less and less. So that in a particular policy area—

Representative HAMILTON. Do you agree that it matters less and less, Mr. Cohen?

Mr. COHEN. Less and less may not matter if I know if it's big or little. If it's big and getting a little less big, it's still very big.

Mr. REICH. Well, let's take some policy areas, because we have been talking mostly about direct investments. We will come back to that.

But, take, for example, publicly supported research and development. There are now several requirements on publicly supported research and development, that it be available only to American companies. That is both with regard to R&D coming out of national laboratories, also with regard to research consortia.

The problem there is that there is no condition placed upon those American companies who receive that research and development to use it and utilize it in the United States. They are global players. They have alliances all over the world. They are taking, very often, that research and development and exploiting it all over the world.

Representative HAMILTON. So, we ought not to require that they be an American company?

Mr. REICH. I would say that rather than—again, I'm being painted as a fair free marketeer, which is something novel in my experience. [Laughter.]

Mr. COHEN. That's why you confused us. [Laughter.]

Mr. REICH. And, I don't mean to be painted in that corner. I am suggesting that rather than look at corporate nationality, for example, with research and development, we ought to say:

Whether you are a West German company or a Japanese company or an American company, you can be eligible to get some R&D assistance in the United States, but you have to exploit that R&D according to certain criteria that we could develop in the United States.

Representative HAMILTON. Do you have any disagreement with that, Mr. Cohen or Mr. Prestowitz?

Mr. COHEN. I have a lot of sympathy with what I think is the underlying statement. And, that is a restless dissatisfaction with the behavior of many American companies.

Representative HAMILTON. What do you suggest we write into the law here? If you are going to get this subsidy from the U.S. Government, you have to be an American corporation. Is that a good thing to put in the law or not?

Mr. COHEN. I don't think so. I like leaving us with a lot of discretion. I like performance: If you get this subsidy, we want to see these things happen.

Representative HAMILTON. Where?

Mr. COHEN. Here.

Representative HAMILTON. Well, there is really not much difference between you on that point, is it?

Mr. REICH. In fact, I don't hear any difference.

Mr. PRESTOWITZ. If I could add something to this?

Mr. COHEN. A little reciprocity, too.

Mr. PRESTOWITZ. My guess is that all three of us are pretty similar.

Representative HAMILTON. On that point.

Mr. PRESTOWITZ. You know, if the U.S. public is going to put up money to develop something, then it would be nice if it were commercialized and exploited in the United States, whether it's an American company or a foreign company.

But, I think that the question that practically arises is this: In practice—and I've seen this in my own experience in government—what is the capability, the real capability or the real likelihood, that a particular foreign company is, in fact, going to do that kind of commercialization and that kind of exploitation in the United States?

You know, if you have a situation in which, you know, you are developing, I don't know, supercomputers and there is a government program in the United States and the candidates to participate in the program are Cray Research and, let's say, NEC. And, you say, "OK, we want this commercialized in the United States." Both candidates may say, "Hey, we will do that in the United States."

But, the fact is that Cray has all of its major research operations in the United States and NEC doesn't. So, NEC may say, "Well, that's OK, we will put something in the United States." But, the practical likelihood that NEC is going to move its whole major research operations to the United States is just very small.

So, you know, in principle, yes. I think we can all agree. But, what does it mean when you get down to the details?

Mr. REICH. But, if we agree with the principle of conditionality, then presumably, based on the premise that both of you have agreed to, we could build behavioral requirements into those regulations or those laws. So, my two panel members agree with me generally, I think, on that policy.

Let's take the second policy area.

Mr. COHEN. One minute. We haven't finished with the first one.

Representative HAMILTON. Let's let our panelists go ahead and slug it out before we get into it.

Mr. COHEN. The other part of the participation and research has to do with reciprocity. A lot of these things have to do with reciprocity.

Let me be really straight—I think we would be in a much better world if there were no political constraints on economic behavior. But, we are very far from that.

The problem is, "OK, come and participate in research here." And, I mean, for instance, the EC's Jessi program should be getting very close to our Sematech and they should be working together.

But, what about participation in the major Japanese programs as a precondition? And, the problem there becomes the kind of thing Mr. Prestowitz was talking about, some of the structural difficulties of participating in these things.

Mr. REICH. Reciprocity cuts in both ways. Remember, the U.S. International Banking Act of 1987 imposes more stringent requirements and burdens on foreign banks operating in the United States than American banks. And, recently, the European Economic Commission considered a reciprocity standard and said, "Well, then, American banks coming to Europe, you are going to have to face greater burdens, because look what you do to our banks."

My point on reciprocity is that it's too—let's not be too glib with regard to reciprocity as in the U.S. interest.

If we all agree that the fundamental standard by which policies should be judged, vis-a-vis competitiveness, is building the skills inside the capacities of the American work force to add value to the world economy and we are talking—

Representative HAMILTON. Can we agree to that?

Mr. COHEN. That's unexceptionable. No one can disagree with that.

Representative HAMILTON. OK.

Mr. REICH. But, then we are talking about means. And, what I hear both of you saying, in a slightly different way, is that the nationality of the corporation is a fairly good proxy for ensuring that the American work force is getting the quality and kind of investment and training that it needs in order to be competitive.

What I am saying is that it's getting to be a less and less good proxy. And, as we go through specific policy areas, I think you will agree with me.

Can we take another policy area?

Representative HAMILTON. Let me call on my colleague, Congressman Scheuer, who wanted to make a remark here. Then, we will go to the other policy area.

Representative SCHEUER. I would like us to examine the whole question of assuring a certain kind of behavior and how do we do that. Now, we've seen a very cuddly, warm, person in Mr. Prestowitz this morning.

The Mr. Prestowitz that I admire and love has some very real reservations about the degree to which we can control or rationalize the behavior, not of a myriad of corporations overseas but of governments overseas. I remember hearing Mr. Prestowitz testify on several other occasions and reading his marvelous book, "Trading Places," and hearing him discuss his experience as one of our trade negotiators with the Japanese Government.

And, my impression is that Mr. Prestowitz had real reservations about the ability of our trade negotiators, as many as they are, to really control the policies, practices, and the bureaucratic product of the Government of Japan.

Now, I don't want to put words in his mouth. He is perfectly capable of speaking for himself. But it seems to me, this business of controlling governments and trying to control their economic behavior, much less controlling a myriad of foreign corporations and their behavior in the United States, is a very nice business.

And, I would like the old Clyde Prestowitz, the feisty Clyde Prestowitz, to tell us from his experience as a trade negotiator, is this in the realm of the possible or are we talking eyewashing?

Mr. PRESTOWITZ. I think a lot of it is eyewashing. Let's look again, as a practical matter, at the question of improving the skills of the American work force. Nobody can disagree that what we want is a highly skilled work force operating at the cutting edge of whatever it is.

The very real question is, how do you get there? And, we have, I think, some examples in practice of how some of this works out in various contexts.

The leading edge development in television these days is not done in the United States. It used to be. But, it's not done in the United States now.

If you are a doctoral candidate in electrical engineering at MIT and you desperately want to get into high definition television research, you don't go to work for an American company. You used to, but you don't do it now.

Now, one reason for that is because in the 1960's and 1970's, as I said earlier, there was a history of a combination of Japanese industrial policy and collusive behavior by Japanese cartels which had a very deleterious effect on the American television industry. And, in response to that, many American companies got out of the business or, if they didn't get out of the business, they moved their operations, as Zenith did, to Mexico or someplace else.

Now, people have criticized them for doing that and have called them shortsighted or even non-American. But, the fact is that the U.S. Government encouraged them to do it. We set up special tax deals to encourage them to develop manufacturing platforms in Taiwan and Mexico.

And, so, in effect, what happened was, through a combination of Japanese corporate behavior, Japanese Government policy and lack of any concern for American corporations by the U.S. Government, we have created a situation in which the level of competence in television technology in the United States today is relatively less than it was 20 years ago. That is not a formula for improving the skills of the American work force.

And, that same story has been repeated in a number of other industries and is being repeated today.

Mr. REICH. I think Mr. Prestowitz is being all too kind to American corporations and the management of American corporations involved in consumer electronics, like televisions.

My reading of history is slightly different from his. We could debate all day about what actually happened. I'm sure there was

some predation. I know there was some predation. I was in the Federal Trade Commission at the time. We studied that.

But, there was also a record of very, very bad performance on the part of American managers and American manufacturers of color televisions, a slow performance with regard to moving from vacuum tubes to transistors, very, very slow to develop the new manufacturing technologies. And, at least part of the responsibility for losing that industry lies at their feet.

The second point, with regard to Americans involved in the new generation televisions—as long as we are talking about televisions—it is true that there are very few American—there is only one American manufactured television. But, if you look at the leading edges of high definition television, particularly flat screen displays and related technologies, Thomson and Philips have both opened up research laboratories in the United States, employing American engineers and technicians. There are a lot of Americans involved right now in the next generation of high definition television.

They don't happen to work for Zenith. They are not working for an American company. But, they are involved. And, as Americans, they are adding substantial value to that next generation of consumer electronics.

Just a couple of small corrections for the record, if I may. Mr. Cohen said that Japan is half of everything. Well, it's not quite half of everything.

British direct investment in the United States, even this year, is more than twice as great as Japanese direct investment in the United States just this year, let alone the cumulative investment.

Another point that I wanted to stress here is that when we talk about control, there is a great deal of worry that has been expressed about the control of assets under the aegis of Americans, but for national defense purposes it's much more important that assets be here within the United States, whether they are owned by Americans or foreigners, than it is that we may have assets abroad.

I want to remind the committee that in the Second World War, Ford's subsidiary in Germany ended up making trucks and other weapons for the Nazis.

The issue is really, in the case of national security and a national emergency, who actually has the political capacity to expropriate? And there were a lot of American firms that were working in Kuwait that are no longer working in Kuwait but their facilities are still in Kuwait.

Representative HAMILTON. Go ahead.

Mr. COHEN. I think that's not the defense question. It's not a stockpile of iron or freight cars that could be mobilized in an emergency. It is the development of a technological capability.

That doesn't happen in the context of an emergency. It happens cumulatively, as when foreign company x dominates miniature ball bearings. If you are not in miniature ball bearings, you have a problem in a lot of defense activities.

Over a 3- or 5-year period, we can run down the technology capability of this country for good business reasons. Once there was a miniature bearing capability in this country. Then a foreign-based

MNC clobbers those companies and eventually buys them. It nationalizes on a world scale, it puts something in Singapore, something in Finland, and keeps the home base in Japan. What do we have? That is the defense question.

Mr. REICH. I agree, but that—

Mr. COHEN. No, please. You were correcting what I had said. And, your correction didn't deal with what I had said.

This is what I am saying: The defense question is not anything like the requisitioning in a time of emergency of a fleet of airplanes or an automotive plant. It's about being able to sustain technological leadership. All our defense posture is premised on staying technologically ahead. It's the only premise we have left.

Mr. REICH. Let me, if I may, qualify your correction. [Laughter.]

Representative HAMILTON. Every now and then, we want to get into this, too. [Laughter.] I really don't object. Go right ahead.

Mr. REICH. Technological competence is, of course, critical. And, I and other members of this panel have been for years talking about America's technological competence.

But, again I am defining technological competence in terms of the skills, the insights and the capacities of the American work force, not in terms of the technological competence in some abstract sense of an American company that may be doing a lot of its advanced research and development and fabrication abroad.

Texas Instruments is rapidly becoming a Japanese company. It's doing more and more of its advanced work abroad. We can debate about why that's the case.

But, my point is, if the objective is skills, insights and technological competence in the American work force, then what we are really talking about is not ends but means. And, I am suggesting that no longer is the mere nationality of ownership a very good proxy for getting us toward that end.

And, again, I am happy to take other policy areas in addition to research and development.

Representative HAMILTON. Well, let me move to another policy area, and that's the whole business of limitations on outside investment.

My understanding is that some foreign countries have stricter limitations than the United States does on outside investment, Japan for one. Mr. Prestowitz, you may want to correct me on that.

But, for example, Japan limits foreign ownership of technologically innovative companies to 25 percent, I am told. Now, should the U.S. Government intervene to prevent American companies from selling off their critical technologies to foreigners?

Mr. PRESTOWITZ. I think that again there has to be a differentiated policy.

Representative HAMILTON. What kind of limitations should we have on foreign direct investment?

Mr. PRESTOWITZ. My view is that we need—you have to approach it from a different angle. I think you have to approach it, first of all, from what kind of a structure of an economy do you want.

For example, if we want—if it is important to have flat panel display technology in the United States, at the moment we are probably not going to have it. Why aren't we going to have it? Because in the United States at the moment, the only companies that are

dealing in it are relatively small venture startup companies. They have good technology. They are at the leading edge of the technology, but their ability to commercialize that in the face of the Japanese giants is extremely questionable.

So, we are probably not going to have that technology in the United States unless the Japanese transfer it to the United States. Now, whether or not the Japanese allow us to invest in flat panel technology or to buy companies in Japan, it seems to me it is in our interest to have that technology in the United States. So, I wouldn't want to bar Japanese investment in the United States in flat panel technology. What I would rather want to do is to adopt a policy that effectively forces them to transfer the technology here, that effectively says, "Listen, if you want to sell that technology in the United States, we would like to see you make it in the United States."

And, that effectively assures that the technological capability is going to be transferred to American workers by requiring that those investments be in the form of joint ventures with American companies so that you are sure that the technology is transferred to the United States.

Representative HAMILTON. Mr. Reich, you don't have any problem with that, do you?

Mr. REICH. Right now, I don't have a problem in principle. But, the technique to use, suggested by Mr. Prestowitz, I do have a problem with.

Let me backstep one small step. State Governors are now paying approximately—depending upon whose numbers you look at—between \$250 and \$500 million a year trying to get companies, not only foreign companies but also American companies, to stay put or to come to their jurisdictions. And, that's a lot of taxpayer money.

Representative HAMILTON. Without much limitation, right? Just come over here.

Mr. REICH. Well, not only limitation, but they would love to have the investment. They want the investment.

Most countries around the world are also competing for direct investments.

Representative HAMILTON. And, you are suggesting what the State Governors in this country are doing is wrong?

Mr. REICH. I'm suggesting that the State Governors are, in a sense, bargaining against one another. Rather than Arkansas bargaining against Mississippi, raising the price essentially for keeping or attracting companies, we ought to do it as a nation, as other countries do.

Representative HAMILTON. So, the way the State Governors are doing it now works against the American national interest?

Mr. REICH. I think it's far too expensive. I think we are spending far too much in luring companies—and, again I'm talking about global companies of whatever nationality, including the United States. If we did it nationally, we could get a much better "deal" with regard both to jobs and also the quality of those jobs.

Representative HAMILTON. What does that mean, doing it nationally? Does that mean we prohibit the Governors from doing it and only let the President do it?

Mr. REICH. Well, the first step might be——

Mr. PRESTOWITZ. Well, we have the Logan Act. The Logan Act is supposed to prevent States from carrying out diplomacy.

Representative HAMILTON. I just wanted to explore this word "nationally" a moment. I mean, what does that mean?

Mr. REICH. Well, it could mean several things, Congressman. For one thing, we could encourage—the Federal Government could encourage States through a variety of means to regionally—in fact, we started doing this in the Midwest—cooperate on the kinds of incentives they are providing to global corporations, so that instead of one State bidding against one another the States are essentially acting as a pool. That would get us a better deal.

We could also, as I said before, do it nationally. Mr. Prestowitz, in talking about direct investment, says that he would rather—with regard to the Japanese and presumably other countries as well—force them to come here with, I suppose, a sort of domestic content requirement with regard to high technology—if you want to sell it here, you make it here.

I am suggesting that a preferable alternative would be to get some control over the incentives that are already being applied to lure direct investments from all over the world including making sure that American companies come to particular jurisdictions. That's a first step.

Representative HAMILTON. Mr. Cohen, you are shaking your head there.

Mr. COHEN. Yes. I actually spent a few years looking at regional incentives. I teach regional planning. Almost all the studies in all the nations show the same thing. The packages of incentives on a wide geographic area, something say the size of the United States, are too small as a percentage of the value of things to affect a serious investment by a serious company. They are sometimes adequate to bring in a company that is just about on the ropes and will go bust on you 2 years later.

As a general device for attracting investment into an area, say the United States or Western Europe, it doesn't have enough clout unless vastly magnified. But, that gives you a terrible problem, because if you start subsidizing the new guy coming in, the old guy says, "Gee whiz, I'm going to leave town unless you subsidize me," at which point you have to subsidize everybody.

So, it trips on its own feet. Sometimes they are useful for tipping an investment, someone definitely coming into the United States, definitely going for the Midwest, who can move 50 miles over here or 150 miles over there, or this site versus that site, but not on a scale that would have any impact whatsoever on an economy such as the United States.

Representative SCHEUER. Mr. Cohen, what is your feeling about the incentive plans to lure industry?

Mr. COHEN. On a small geographic zone, it can work. You can move investment from, say, parts of New Jersey toward the South Bronx.

You are not going to move investment that was heading toward Europe or heading toward Japan or even most likely heading toward California toward the South Bronx unless you have huge incentives. And that means you cannot do it for a large hunk of

the country. You had better pick your targets very carefully and then give it a big incentive rather than a little scattered about for almost everybody.

Representative SCHEUER. Let me express my reservations about our ability to control government behavior abroad as it affects our access to their markets as well as their corporate behavior once they come to the United States.

What we have discussed is a wide variety of problems, a competitive disadvantage of American firms laboring under our desire to upgrade the training of American citizens. It seems to me that basically we are underestimating the extent to which these American problems are our own devices, that the problem is not in the stars but in ourselves.

If we want to upgrade the training of American workers, it seems to me we ought to improve the educational system. The way we treat our non-college-bound youth in this country is a disgrace compared to almost every other advanced industrial country in the world that I can think of across the length and breadth of Europe and Asia.

We aren't educating our kids. The former Prime Minister of Japan made a comment a few years ago that Afro-Americans don't know their numbers. Well, it might not have been very good diplomacy, there was some sad truth in what he said.

We have an adult work force that is 25 percent functionally illiterate. In our high schools, we have an average dropout rate across the country of 25 percent. In the Afro-American community the rate is a little over 40 percent and in the Hispanic community the rate is a little over 50 percent.

We do not have a competitive work force and it is not because Japanese companies investing in this country do not perform the manufacturing process here.

Mr. PRESTOWITZ. Congressman, could I add something to that? I think that your point is absolutely right.

But, in considering how we remedy that, of course, there are many pieces. But, one piece of it is reeducation; upgrading within the corporation. Most of those people that you are talking about work in American corporations.

And, in fact, here again is a significant difference in behavior. A number of foreign corporations go to great pains to locate their operations such that they don't have to deal with that problem. And, if we are going to fix that problem——

Representative SCHEUER. What is that problem?

Mr. PRESTOWITZ. The problem of minorities and illiteracy and undertrained workers. So, if that problem is going to be addressed, it really has to be addressed in American companies, which means again you cannot be incognizant of the nationality of the corporation.

Mr. REICH. But, American companies, Congressman, are as fast as foreign companies, trying to exit and abandon areas of illiteracy, areas where human populations——

Mr. PRESTOWITZ. That is not right. I mean, Chrysler has just——

Mr. REICH. Excuse me, Mr. Prestowitz. Let me just finish. Let me finish my point.

I couldn't agree with you more, Congressman, that education and training and infrastructure are the keys to the competitive future. In fact, I think one of the advantages of——

Representative SCHEUER. And, corporate decisionmaking.

Mr. REICH. One of the advantages of——

Representative SCHEUER. Preoccupation not only with this year's annual report but this quarter's—quarterly report.

I heard recently in Japan from one of the sons of Kawasaki that the founder of Kawasaki went to the bank in the 1960's and told them that he intended to break even in 10 years. They said, "Fine. Spread it out." They said, "We will stick with you. Just follow the plan, and we will stick with you and don't worry about the early years."

At the end of 10 years, as predicted, they broke even and by the 12th year they were making out like gangbusters. But, they were willing to take a long-term view.

And, I think the preoccupation of the American corporate community and individual corporate managers with trying to look good at the end of this year and trying to look good at the end of this quarter is a terrible disservice to the American economy, to workers, to investors, to corporations alike.

That is the problem. One of the reasons that Japan has excelled in the HDTV area is because they have invested billions and billions of dollars. An American corporation cannot do that, because they do not have access to savings.

The Japanese rate of savings of personal income is 18 or 19 percent. Our rate is between 4 and 5 percent. They save at an excellent rate.

In other words, a lot of these problems that we are dealing with are our own national problems. The problem of undereducation, the problem of myopic corporate decisionmaking, and the problem of inadequate access to capital by our corporations.

Now, how do we cope with some of the problems that we have run into, and how do we access the Japanese market with an eye to attracting joint Japanese-American high-tech manufacturing ventures on our soil?

Do we need an industrial policy to help us do this?

Mr. REICH. You didn't really use that word publicly, Congressman. [Laughter.]

Representative SCHEUER. Pardon. I wish you could take us from the general to the specific.

These congressional hearings are designed to educate Congressmen, to help us formulate national policy. Let us go through the general to the specific.

What do we do? What kind of a policy, if any, should Congress promulgate?

Mr. REICH. Let's take another—we have talked about two policy areas so far. One is research and development policy and the other is foreign direct investment.

Let's look at trade policy specifically. We have slid around it a little bit.

If we are focusing on the competitiveness of the American work force as opposed to the competitiveness of American companies, we

would have different priorities with regard to, for example, pressuring Japan.

I agree with my colleagues on the panel that we do have to continue to keep the heat on Japan. But, the real question from the standpoint of our national strategy or industrial policy, as it applies to trade, is what are our priorities going to be and where are we going to put the heat?

Now, the U.S. Trade Representative right now makes the claim that very high priority is to get a company like Toys-R-Us into Japan. Well, most of what Toys-R-Us sells are products that are made in Southeast Asia and in Latin America. It would seem to me that, from the standpoint of looking at the ability of American workers and the American work force to get their skills into other jurisdictions, Toys-R-Us should not be the highest priority.

What should be a priority? Well, I will tell you one priority that I think should be among the highest. The European Economic Community is debating whether to allow American entertainment, videos, movies, and so forth, into Europe. Entertainment is one of our major exports in this country, second or third only to aerospace.

That is a very high priority. Even if American entertainers and production people are working for Sony—I don't care who they are working for, we have to make sure that those borders are open to American exporters of entertainment.

So, the trade policy priorities, in other words, would be different if my definition of competitiveness were the dominant definition rather than a definition which turns on merely the nationality, the American corporation, *per se*.

Representative HAMILTON. Mr. Cohen and Mr. Prestowitz, I would like you to comment on this observation Mr. Reich has just made with regard to trade policy.

Mr. COHEN. The purpose of the trade policy is clear. I don't think there is a gram of fundamental disagreement. You try to open markets to American production.

And, you should, in the best of all worlds or even in a decent world, have some priorities. So, instead of yelling at the Japanese, we want you to take perhaps oranges, perhaps rice, first, we have to have some coherence on our side so we can have a list of things—we want this, this and this and in particular ways.

Representative HAMILTON. So, it's a mistake, in your view also, to push Toys-R-Us?

Mr. COHEN. I think it's a mistake to start screaming, say, rice, because in an open market, the rice probably will not come from California where we use scarce, subsidized water to grow the stuff, but rather it's likely to come from Southeast Asia.

Representative HAMILTON. Is it your impression that American trade policy today is too focused on American-owned corporations and not focused enough on corporations that employ American workers?

Mr. COHEN. It might well lean that way. Mostly though, I don't think it is focused. I think it grabs at things and sometimes it grabs at a particular company and tries to deal with its problems. But it does not have a strategic list of priorities; it derives from no

clear and consistent strategy. And that starts at the White House and the Congress.

But, here I will defer to an alumnus of the USTR organization.

Mr. PRESTOWITZ. Well, I don't think it's fair to put the emphasis that Bob Reich put on Toys-R-Us. Toys-R-Us was not a major objective per se in the last round of negotiations.

The reason Toys-R-Us name arose was because the U.S. Trade Representative was trying to liberalize the entire distribution system of Japan, which I think is a major objective and certainly one that has been a problem for a wide variety of U.S. producers.

Toys-R-Us happened to come along at a time when the distribution system was at issue, and they had a problem and they became symbolic. It's similar to the baseball bats, you may remember, back in the early 1980's. We were negotiating with the Japanese about metal baseball bats and many people thought that we were wasting our time on metal baseball bats, which is a small item. But, the real negotiation was not metal baseball bats. It was standards. And, the standards covered not just bats but a whole ream of problems.

So, I don't think that, in fact, the United States was guilty of only focusing on Toys-R-Us.

Second, I would say that contrary to what Bob Reich said, I really am not so much in favor of putting heat on Japan. And, the reason I say that is because implicit in that statement is the notion that if we somehow pressure Japan we will open their markets and that this will help us solve our trade problems.

In truth, I don't believe that we can open the Japanese market. I don't believe that the concept of open, as it is understood in Japan, is at all commensurate with our concept of open. And, I believe that by putting heat on Japan, we really do nothing except exacerbate the relationship with the country without really solving our problems.

However, it seems to me that the point that both Bob Reich and Stephen Cohen made is correct. We need to decide what it is that we as a nation want.

A great deal of our problem in trade policy is that we have no objectives beyond the very general ones, that we want open and we want free. But, when asked to come down and define what does that mean, if you get into a negotiation with some other country—typically the Japanese, we say, "Why don't you open your markets?" And, they say, "Fine, which markets?" And, we say, "All of them." And, they say "OK, but what are your priorities?" And, then we are stuck, because we don't have any priorities.

And, the reason we don't is because of a fundamental premise of current American thinking which is that we are indifferent as to what we make. Mike Boskin has made the comment, "Potato chips, computer chips, they are all chips. A hundred dollars' worth of potato chips is the same as a hundred dollars' worth of computer chips."

If you believe that, then you really don't care which market you open. You really don't care what your domestic companies are producing or what is being produced within your borders. You really don't care about what happens in this great global village, because it's all going to come out the same.

But, if you believe that computer chips really have a different impact on your economy than potato chips, then you are forced to begin to consider a strategy. And, what the United States needs is to begin thinking about a strategy.

We really can't solve any of these problems, the "Who Is Us?" question or the trade policy questions, unless we have a strategy.

Representative HAMILTON. If I understand Mr. Reich's point on this trade policy question, he is saying that we want to be interested in opening foreign markets not to American companies but to companies that have American workers, and that ought to drive trade policy. Right?

Mr. REICH. Yes, sir.

Representative HAMILTON. Now, you are talking about principles, Mr. Prestowitz. Is that a principle you think ought to drive our trade policy or not?

Mr. PRESTOWITZ. Well, I think that it is desirable for us to have the maximum opportunity to sell products made in the United States, by whomever.

Representative HAMILTON. The point is, what should drive our trade policy?

Mr. PRESTOWITZ. I mean, again, let's get back to practical questions. Here is the situation we get into.

Somebody puts an assembly plant in the United States and then they export an assembled product from the United States to Europe or what have you. Not very much value added is done in the United States. The industry in the United States may have been harmed or destroyed by predatory trade activity.

But, then they come and put an assembly plant in the United States, they tell us they are producing in the United States, and they then ask the U.S. Trade Representative to go negotiate with the Europeans to open European markets to what is essentially a dodge. I don't think we should be in that position.

Representative HAMILTON. What then should drive U.S. trade policy?

Mr. PRESTOWITZ. Well, what should drive U.S. trade policy is again coming back to a strategy. Now, if we want to have high value added in the United States and we want to have high wage jobs in the United States, then we have to decide what kind of production gives us that.

Representative HAMILTON. That ought to drive our policy—

Mr. PRESTOWITZ. And, having that, we then also want to export those kinds of products. And, if they are made by men on the Moon, that's fine as long as we get that value out of the United States.

Representative HAMILTON. Mr. Cohen, did you want to add anything?

Mr. COHEN. I find myself in substantial agreement with that and also with the danger that Clyde Prestowitz was pointing to about falling into an awkward situation vis-a-vis exports to Europe from the United States that are really not from the United States. I think it's a very real danger at the moment.

Representative HAMILTON. Let me go to this question. It's a broad question. And, I guess you have addressed it, but I'm not sure it's clear in my own mind what you are actually saying.

What is our national interest in foreign investment in technology? What are the risks? What are the concerns?

Mr. PRESTOWITZ. You mean foreign investment in the United States in technology?

Representative HAMILTON. In the United States, yes. What should we be concerned about. If a company in Japan or wherever wants to come into the United States and invest in American technology, how should we react to that?

What's good about that? What's bad about it? What kind of conditionality ought we to put on it and so forth?

Mr. COHEN. Two steps——

Representative HAMILTON. Mr. Cohen and then Mr. Reich.

Mr. COHEN. Two steps. One is, we first must have the capacity to analyze the project. Otherwise, we are not going to get very far. So, we need an ongoing capability.

Representative HAMILTON. We is who?

Mr. COHEN. The U.S. Government.

Representative HAMILTON. All right.

Mr. COHEN. Second, there are some behavioral things we want to see happen. We want to see technologies transferred into the United States. We want, for instance, the flat panel display technologies that we were talking about. We want to see research and development done here. We want to see the next generation of product developed here.

Now, there are many companies, some of which have been mentioned here earlier—Philips and Thomson—that are doing just this to a very substantial extent. I'm not saying foreign-based companies are bad, and I'm not saying they are good. I'm saying you have to be able to distinguish what they are doing and what you want them to do. If we don't distinguish, then we are lost.

I can imagine a predatory type technology investment also. Somebody comes in and buys a \$20 million or a \$200 million American company with an interesting technology, takes the technology back to the home country and basically runs down the U.S. operation or else uses it as a distribution agency so that nothing much else happens here. This company, the one they bought, begins to sell product. It markets it, it does some assembly, but it loses the capability of learning and developing anything again.

Representative HAMILTON. How do you stop that?

Mr. COHEN. Not easy. One way is, you can have official discouragement. We need instruments—we need the capability to analyze, and we need some instruments to act.

And, as long as—I thought what was being proposed here was——

Representative HAMILTON. Hold on. So, instruments to act would mean that the Government could come in and could say, "Stop it," right?

Mr. COHEN. Yes. However, there should be gradations and room for flexibility. We have a habit in this country of trying to get the relationship between the state and the economy very clear. That is an admirable objective.

But in this domain, our major problem is that we are dealing with the world, especially, let's say, Japan, where that is not the

way it's done. And, each time we strive for clarity, we blow substance!

I would like to have some discretion to, say, negotiate what would be good behavior, what we would actually like to see happen and then circumscribe the areas. You need a watchdog over it.

Representative HAMILTON. Mr. Reich.

Mr. REICH. With regard to foreign direct investment in technology, or technology investment generally, three points. We want to encourage foreign companies to invest in high value added in the United States, as we have been defining it—complex production, fabrication, research and development, engineering, and so forth.

But, we also want to encourage American companies to do exactly the same thing. How do we generate those encouragements and incentives?

Well, we have a lot on our plate to do that. We have \$70 billion of government subsidies to research and development. We have trade policy. We have tax policies, loans, and loan guarantees. We don't have a lack of policy instruments to encourage American and foreign companies to invest in high technology in the United States and to train American workers.

We also have to have an educational system that generates the kind of skilled worker that is capable of utilizing that technological investment.

Now, with regard to gradation of predatory practices, we have antitrust laws. They have not been enforced. We have had 10 years of very lax antitrust enforcement.

I used to be in the antitrust business. I was thrown out of office, and look what happened. [Laughter.] Antitrust laws do what—

Representative HAMILTON. What did happen? [Laughter.]

Mr. REICH. Well, I think essentially what happened is that we, with regard to foreign companies, domestic companies, no real difference implied, we have had a great deal of tacit collusion. We've had monopolistic practices. We've had predatory practices which, if antitrust laws were being enforced, we would not have.

But, again, the headline of this statement is that we shouldn't necessarily draw a distinction between foreign and domestic firms. Whether we are talking about trying to get firms to invest in high technology in the United States or to avoid predatory tactics, we don't need to draw that distinction.

Representative SCHEUER. Mr. Reich, are you talking about industrial technology, whereby we set up some kind of corporate entity that would use the carrot or the stick financing arrangements, and various other incentives, with the clear intent and capability of discouraging what you would call negative corporate behavior?

Are we going to have some agency in Washington that scrutinizes?—and maybe we should. I am not suggesting we should not.

But, when you talk about the goals of exemplary foreign behavior of the investor, of the desirability of foreign corporations entering into joint ventures, the undesirability of predatory behavior, the undesirability of a foreign corporation buying up a domestic corporation that has valuable research and patents and so forth and shipping the plans and specs and the underlying scientific research back to the home country, are you talking about some government office in Washington that is going to supervise all this, do

all this fingerprinting, and discourage and encourage proper behavior with a whole plate of incentives and disincentives?

Mr. REICH. Congressman, we already have the incentives and disincentives. We already have an industrial policy.

We have talked now about four different areas—research and development and technology policy, trade priorities and trade policy, antitrust policy, and foreign direct investment policies.

We have large numbers of bureaucrats, officials, politicians, and others who spend a lot of their time looking at these areas.

What I'm suggesting is that we, No. 1, ought to focus on the real goal, which is not nationality of corporations but on developing the skills and insights of the American work force. And, No. 2, we probably do need to wield all of those instruments more effectively toward that end.

And, maybe we have to have more coordination. This is not the era to advocate—and I am not an advocate of—a centralized economic plan. We don't need to go that far. We just need to do what we are doing already but do it in a more strategic way.

Representative SCHEUER. Let me just ask one last question on the antitrust laws that were passed a century ago when it was our goal to prohibit the Standard Oil Co., the Rockefeller companies, from gobbling up every other smaller oil company.

Today, in a global economy, is it possible that the goal of our country should be, not to make sure that there are three or four American oil companies surviving domestic commerce, rather, that there should be one major American oil company surviving in global competition?

And, do you feel that the time has come where we ought to have a look-see and a reappraisal of our antitrust laws. That we should focus on the realities of a global economy in the 1990's and in the third millennium, as compared to the underlying philosophies of today's antitrust laws, which emerged from an agricultural country with a small industrial base, the realities of 100 years ago?

Mr. REICH. Well, certainly in assessing market power, we do have to—many industries now look at global markets rather than national or even regional markets, as we used to.

What concerns me though is, for example, a new policy that is now being shepherded through the Justice Department with the support of the House, and that is the policy to relax antitrust enforcement for not only research joint ventures but also production joint ventures so long as they are American companies that are getting together. Again, I think that is the fallacy of nationality.

Any companies, if you can show effectively that there are economies of scale to be gained from a production joint venture, that the companies would not have otherwise come into the Nation and exploited those economies of scale, and it's not going to have a substantial deterrent effect on competitiveness, any companies ought to be able to take advantage of that. But, I do worry about using antitrust or relaxed antitrust enforcement as an excuse for developing a much more strategic antitrust policy which could go after predatory activities in whatever guise.

Representative SCHEUER. Well, just to be the devil's advocate, do you not think it possible that if our great television manufacturing entities like RCA had been able to combine their resources and

their research and development, they would have been able to maintain a substantial American television manufacturing presence in global commerce?

Might they not have been able to aggregate the capital that would have given them an early and promising place in the movement toward high definition television (HDTV)? Today they seem to be substantially excluded from HDTV because of an inability to aggregate the capital necessary to get into the HDTV field seriously and competitively.

If they had been able to get together, might the result have been different?

Mr. REICH. Well, had American companies been able to get together facing world competition, it is conceivable that they could have gained the economies of scale and resources to be more competitive. But, again I come back to my theory.

There is no guarantee that that large America, Inc., television manufacturer would have been doing very much in the United States. Not too long ago, American media companies, Time and Warner, came to Congress and said, "Don't worry, we were giant media companies but we want to get together to make America stronger with regards to confronting the Rupert Murdoch's and the Hessische's and the Bertelsmen of the world."

Well, in point of fact, Warner is a global corporation. It has facilities and outlets and employees, tens of thousands of foreigners. Meanwhile, Rupert Murdoch and Hessische and Bertelsmen are here in the United States employing tens of thousands of Americans.

The fiction that there is an American corporation representing the American global media industry is just that; it's a fiction. And, it leads to some policies that have very little to do with our goal, which should be to improve the skills and capacities of the American work force.

Representative HAMILTON. One thing I would like you to comment on, and it doesn't make any difference who comments on it, is that some people argue that foreign investment in this country is actually disadvantageous to the American worker because what happens is that they come in and they transplant imports from abroad, and this works to our disadvantage.

How do you evaluate that?

Mr. COHEN. Again, I would do it differentially. A blanket statement about foreign investment would preclude all possibilities of saying anything meaningful or useful.

It varies by industry; sometimes it varies by the nationality of the company investing. Furthermore, a lot of the numbers are made of rubber.

If, for example, you look at some of the transplant auto operations into the United States, they claim x percent domestic value added. If you open the lid and look at the x percent, you find that they bought components from a recently transported Japanese component maker, which itself claims to have reached 30 percent domestic value added. The 30 percent claimed by the final assembler includes these parts as American made although they are only 30 percent American manufactured.

If you run the chain of multiplication out, American value added, when you open the lid, becomes a lot less than when you read the data in the economics journals and company statements.

Behavior of foreign companies—foreign-based multinationals I prefer to call them, because I don't think there are any globals yet—varies so much that the class itself is not a useful category.

If we are going to make policy on the basis of a single class, we are going to trip again. I think we must have the capability to differentiate. One must be able to understand and manipulate the incentives and reasons that prompt companies to perform the way we want and be able to strengthen just those things. We must help the American manager of Philips, or Toshiba make his case back home to his headquarters for permission to continue doing what we want that company to do.

Representative HAMILTON. Would all of you be opposed to domestic content legislation?

Mr. PRESTOWITZ. No.

Representative HAMILTON. Do you favor it?

Mr. PRESTOWITZ. In some instances, yes.

Mr. REICH. I think we are going to have to have in the future, Congressman, some sort of a GATT, a general agreement on tariffs and trade, for direct investments; that is, if countries are going to continue to move down the channel of both subsidies to encourage global direct investments within their jurisdictions and also domestic content, then we could easily create a zero sum or a negative sum game, as mathematicians call it, in which we all lose.

There have to be some rules of the game with regard to those kinds of incentives.

Representative HAMILTON. Are countries moving down that road?

Mr. REICH. Countries certainly are moving down that road, both with regard to domestic content and subsidies to encourage investment.

Representative HAMILTON. And, Mr. Prestowitz, you said you would favor it under certain circumstances?

Mr. PRESTOWITZ. Yes.

Representative HAMILTON. Can you explain that?

Mr. PRESTOWITZ. Sure, I think again it comes back to two points. One is that it would be nice if we lived in the theoretical world of a GATT where governments are unconcerned with what happens in their jurisdictions and competition takes place between individual entrepreneurs. We don't live in that world. We live in a world which is increasingly one of trading blocks.

And, second, because we live in that kind of a world, and if we are concerned with the skills and the capability and productivity of American workers, clearly there are some industries which have higher technology inputs, which have higher growth in productivity, which have greater learning curve effects than other industries. We have to, therefore, want to have our workers in those kinds of industries.

There are instances—let's take something like video tape recorders, for example. Japanese companies have been selling VCR's in this country for 20 years. Not a single VCR is made in the United States.

Recently, a small Scottsdale company came up with a patent for a dual-deck VCR. It tried to produce this product, but in order to produce it it had to obtain parts from the only people who make the parts, the Japanese. They went to the various Japanese companies to get the parts, and they all refused to supply the parts. Ergo, the product could not be produced.

Representative HAMILTON. It could not be produced here?

Mr. PRESTOWITZ. It could not be produced in the United States, right. And, because, in fact, the—again, this gets back to corporate behavior, but—

Representative HAMILTON. Is that why the Japanese companies refused to sell them the parts, they didn't want it produced here?

Mr. PRESTOWITZ. Well, we don't know specifically why they didn't sell him the parts. But, since he had a patent on a technology that they didn't have, one can speculate that they didn't want it commercialized.

And, then you get again back to the question of corporate behavior. These companies are all joined together in the Electronics Industry Association of Japan. They agreed among themselves not to supply this kind of technology.

Now, that means that—

Representative SCHEUER. Excuse me. That would have been a violation of our antitrust laws if that kind of behavior had been present.

Mr. PRESTOWITZ. That's right. That's correct. Now, that means that if you want to have video tape recorder technology in the United States—and I think that is desirable, and the same can be said for flat panel technology and high definition technology.

If you want to have that in the United States, it's clear that there is a great reluctance on the part of some of the major players in this game in the world to put it in the United States. So, if you want to have it, you have to find some way to either induce it or force it.

And, that's an area where I would consider having some kind of a policy.

Representative HAMILTON. There is a book out that is getting a lot of comment around here, "The Competitive Advantage of Nations," and that book argues, as I understand it, that the globalization of industry makes nations more important rather than less important, because the competitive character of the multinational corporation is shaped by the domestic market.

Now, does that have a relevance to what we are talking about here? And, if so, how? And, is it a valid thesis?

Mr. PRESTOWITZ. If I could ask you a question? I am a little bit confused, because my understanding is that the argument or the basic thrust of the book is that competition takes place between corporations, not between countries, and that the role of governments is minimal, if any, in determining the competitiveness of various nations.

Representative HAMILTON. So, nations are less important than the thesis; is that right?

Mr. PRESTOWITZ. Yes. That's my understanding, yes.

Representative HAMILTON. Well, in any event, it doesn't apply to what we are talking about here?

Mr. PRESTOWITZ. Well, just commenting on the book, I think that, as I understand the thesis, it is that competitive advantage is essentially not determined by government policy but rather by corporate strategy, by factor endowment, by having sophisticated suppliers and sophisticated customers, all of whom, operate in a kind of a—he calls it a diamond, to create corporate advantage.

And, my criticism of the book is that it simply doesn't accord in many cases with the facts. For example, it attributes the competitiveness of Japan's shipbuilding industry to the fact that Japan has a large need for seaborne transport; and, therefore, naturally growing out of its need for seaborne transport, the Japanese build ships.

Well, it ignores the fact that in the 1950's the price of sugar in Japan was about 10 times the world market price and the Japanese Government gave the sole right to import sugar into Japan to the shipbuilders. They bought at the world price, sold it at the Japanese price, and took the difference to develop the Japanese shipbuilding industry.

I just think it completely misses the point of the potential important impact of government policy in determining competitive events.

Mr. COHEN. I would agree with Clyde Prestowitz on that point. I think that the book radically underestimates the importance of public policies with regard to competitiveness.

Mr. PRESTOWITZ. That's the point. There are a lot of big exceptions out there. They are so big that you can't call them exceptions.

Representative SCHEUER. Well, in the waning minutes of this hearing, let me say that this has been very stimulating. I would still like to get some specific suggestions for specific national policy, public policy or perhaps legislation that would help accomplish the goal of enhancing the competitiveness of the American economy 5 or 10 years down the road.

Is there anything that 535 men sitting here in Washington can do to enhance that?

Mr. REICH. Congressman, in addition to the four policy areas that we talked about—and I think we have been fairly specific, perhaps not as specific as we could have, but there is a question of macroeconomic policy as well that I want to put on the table, because one of the fallacies of the 1980's was the notion that the public sector did all the spending and the private sector did all the investing and the crowding out hypothesis became quite dominant in macroeconomic circles; that is, you have to constrain public spending so that you have enough left in the private sector to make the investments you need to make.

But, actually the logic of what I am suggesting—and to the extent that my colleagues agree with me, I think they would agree with this point as well—suggests that that macroeconomic concept should be stood completely on its head; that is, private sector investment is now leaking out to the rest of the world.

In fact, Americans private savings are now very largely in a very large boat that goes to any nation, wherever the best return and the lowest risk can be found. What attracts corporations and global capital to any place around the world, in addition to some of the other public policies we have talked about, are public investments

in education, training, and infrastructure of the sort, Congressman, that you were pointing out before.

The public sector, in other words, is not the sender. The public sector is the critical investor in ways that create unique competitive advantages for a nation in skills and infrastructure, such that global corporations along with other public policies have an incentive to invest in high value-added jobs.

Mr. PRESTOWITZ. Congressman Scheuer, if I could suggest maybe three or four—these are just beginnings, but they are at least a beginning. Let me support Stephen Cohen's proposal that we just get information.

I personally have made it kind of a hobby to keep track of foreign investments in high technology in the United States. I get my best information from Mitsui in Japan. The United States Government doesn't have information that can compare to what the Japanese have.

The Japanese know much more about the structure of our industrial establishment than we do. We ought at least to have as good information on ourselves as everybody else has on us.

I think there are several bills pending before the Congress at the moment—the Sharp-Johnson bill, the Bryant bill and others—aimed at attempting to get better information or even allowing the various arms of the U.S. Government to share information, which we don't even do now. That's a small step, but I think it's important and in the right direction.

The second one, which Bob Reich mentioned, I think is terribly important. We have 50 State Governors all competing to see how much they can give away in subsidies to attract investment that basically has to come here anyhow.

The Japanese don't allow that. The Japanese Government coordinates the activities so that they don't bid against each other. Other governments do the same thing.

It should be possible to get 50 State Governors in a room together and hammer out some guidelines on that kind of constructive warfare.

A third—

Representative SCHEUER. It should be.

Mr. PRESTOWITZ. I mentioned earlier, we have the Logan Act. I mean, we do have the Logan Act. Somebody ought to raise that and maybe modify—

Representative SCHEUER. Let's clear up the matter of the Logan Act. The Logan Act prohibits American citizens from going abroad and engaging in negotiations on legislation, international affairs treaties, or what have you.

I would not think that any portion of the Logan Act would prevent Governor Cuomo of New York from going to Tokyo and trying to entice Mitsubishi to come and open up a plant in New York State.

Mr. PRESTOWITZ. Well, I think—you are a Congressman and I'm not. But, I mean, basically the States have embassies over there. They do the same work that the U.S. embassy does.

They do get involved in the negotiations that we have with other nations. And, I think it's not a clear line.

But, anyhow, that's an area of activity where I think some action could be taken.

Third, we talked about desirability of improving the U.S. work force. In order to improve the U.S. work force and maintain high skill levels, you have to have them working on important projects. Flat panel display technology, everybody knows, is an important project.

The Defense Department has been contracting with foreign companies to supply it, even if those companies have been dumping in the U.S. market against the U.S. producers of that technology. Maybe there should be or could be some policies or coordination at least guiding American Government procurement so that it supports development of technology in the United States.

Representative HAMILTON. Mr. Prestowitz—excuse me, Congressman Scheuer, just a moment. Your first point interested me.

Do you have good information now in this country about foreign-owned firms operating in this country?

Mr. PRESTOWITZ. That's very sketchy. You know, the SEC requires anybody with bigger than a 5-percent stake in a public company to declare. The Commerce Department collects information on establishments.

Representative HAMILTON. But, what kind of information would be most helpful to you or to others for an analysis of foreign investment activity in this country?

Mr. PRESTOWITZ. Well, I really think if we had basically full knowledge of reporting of all foreign investment in the United States, not only the investing party but the ultimate investor—because very often it's done through—

Representative HAMILTON. Would that have any chilling effect on foreign investment?

Mr. PRESTOWITZ. No. In my view, that's a real red herring.

Representative HAMILTON. It is?

Mr. PRESTOWITZ. Other governments have much more extensive requirements. The United States is the most desirable object of investment.

I think that's a red herring.

Representative HAMILTON. It's about time to finish up. Any further final comments from the members of the panel?

Congressman Scheuer, any further questions?

Representative SCHEUER. May I ask one more question?

Representative HAMILTON. Sure.

Representative SCHEUER. Underlying this hearing has been the very realization that it is difficult to control governmental behavior and the behavior of foreign corporations, in respect to the impact on the United States. Desirable as that may be, it is a very uphill job.

There is one thing the U.S. Congress can control that might affect our competitiveness, our ability to mobilize the resources of a \$5½ trillion economy, permits us to decide how we want to deploy this enormous resource.

Do any of you have any suggestions as to how our government, our economists, addressing this powerful asset can take considered, measured steps together that would place us 5 or 10 years from now in a position of peak competitiveness, that would give us an

economy that is an attractive place for foreigners to invest and to bring their technology, and would solve the problem that we have discussed today?

Mr. PRESTOWITZ. Congressman, as you know, that's a huge question and requires a lot more time. Books have been written on it. All three of us have written books on that subject.

But, if I might just say one thing, which I think is the heart of it—and I've come to this after an awful lot of discussion and talks around the country. I think it really gets down to wanting to do it.

If we were to—if the President and the Congress were to say that achieving industrial, technological, and financial leadership is the top priority of the United States, that it is as important or more important than dealing with Gorbachev or whatever the hell it is, that it is the top priority in the United States, that would change an awful lot of things.

At the moment, effectively we subordinate economic competitiveness to all kinds of other priorities. And, until we stop doing that, we really can't attack the issue.

Mr. REICH. I have a slightly different, but I don't think inconsistent, recommendation at this high level of generality, Congressman.

If you accept the definition of competitiveness that I have been advancing, that is the skills and capacities in our work force, what we find is that the top 20 percent of the American workers have been becoming more competitive, not less competitive. It's the bottom 80 percent that are becoming less competitive.

And, the political challenge faced by the White House, faced by Congress, faced by all leaders, is to try to convince the top 20 percent that they have a stake in the future productivity and competitiveness of the bottom percent and, therefore, make them willing to invest in that competitiveness.

As you know, the Federal Government has been disinvesting like mad in education, child care, training of workers, and infrastructure.

Representative SCHEUER. The Japanese with less than half our population graduate more engineers and scientists every year than we do.

Mr. COHEN. If I can add a wrap-up thought, I am quite in agreement with what is being said; I think we all fundamentally agree. It's a question of will on our part.

I'm perhaps a bit more pessimistic. I think there is a tone underneath this discussion, a feeling of decline, of an unprecedented challenge to this country, one we don't like, one we are not used to, and one we are not quite certain we are willing to admit to ourselves.

And, I'm not sure we will. There is a choice. We can rally. We can restore our competitive position. It's not foreordained. It's not like the phases of the Moon or the life cycle of a person.

It is our choice. And I'm not sure that we will make the right choice. If I were a betting man and not a fool, I would be betting against us right now.

I engage myself. I try. We have to keep doing this. It's a problem of collective will and understanding. You and I can make a list. Each of us can come up with our lists. They are not going to be that different.

But, none of that has been happening. If you made your list and you looked at it, you would observe that we have been going negative, negative, negative, negative and on each item on the list and for some substantial amount of time.

What is worse is that other serious countries have been going positive. And we are talking about relative wealth and power.

So, I think the problem is not so much one of thinking up the major items on a list that begins with: "America must," and then adding two dots, and filling it in. At the top of the list, there is a Washington problem, a problem of leadership. What can you do to help us, all the people out there?

What you can do to get us to force you to start doing the right thing? And, it's not coming down. We are not hearing you.

Representative HAMILTON. Well, that's why we are having these hearings, Mr. Cohen. And maybe we will get off to the right start.

Thank you very much. We stand adjourned.

[Whereupon, at 12:15 p.m., the committee adjourned, subject to the call of the Chair.]

"WHO IS US?"—NATIONAL INTERESTS IN AN AGE OF GLOBAL INDUSTRY

THURSDAY, SEPTEMBER 13, 1990

**CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.**

The committee met, pursuant to notice, at 10 a.m., in room 2359, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the committee) presiding.

Present: Representatives Hamilton, Scheuer, and Upton.

Also present: Joseph J. Minarik, executive director; Joe Cobb, minority staff director; and Dorothy Robyn and Doug Koopman, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative HAMILTON. The meeting of the Joint Economic Committee will come to order.

The purpose of today's hearing, the second of two, is to explore further the question: What are U.S. national interests in an age of global industry? The growing importance of multinational firms, international joint ventures, and foreign investment has blurred the lines between "them" and "us." This requires us to begin to rethink whether, and to what extent, our national well-being is still tied to the well-being of American-owned firms, and to reconsider how our government can capture the benefits of the increasing globalization of industry.

We are fortunate to have with us today several experts in this area. Gerald Dinneen—is that the way you pronounce that?

Mr. DINNEEN. That is correct.

Representative HAMILTON. He is foreign secretary of the National Academy of Engineering. At one time, he directed MIT's Lincoln Labs. From 1977 to 1981, he served as an Assistant Secretary of Defense for Command, Control, Communications, and Intelligence. Following that, Mr. Dinneen spent nearly a decade as vice president for science and technology at Honeywell Corp.

Laura Tyson is a professor of economics and business administration at the University of California, Berkeley. She also serves as director of research for the Berkeley Roundtable on the International Economy, and is currently a fellow at the Institute for International Economics. Ms. Tyson's most recent book is "Politics and Productivity: How Japan's Development Strategy Works," published

last year, which she edited along with Chalmers Johnson and John Zysman.

Dean Peterson is a consultant to the Emergency Committee for American Trade and principal author of a forthcoming report on the contribution of U.S. multinationals to the American economy. He authored a 1973 study, "The Role of the Multinational Corporation in the United States and World Economies." Mr. Peterson's background includes service with the International Trade Commission and the U.S. Trade Representative. He was chief economist of RJR Nabisco from 1975 until recently.

We are very pleased to have you with us today. We will begin with your testimony, Mr. Dinneen, and move across the table. I understand you are accompanied by Mr. Proctor Reid, who is also with the National Academy of Engineering. Is that correct?

Mr. DINNEEN. That is correct.

Representative HAMILTON. Glad to have you with us too, sir.

You may proceed, Mr. Dinneen.

STATEMENT OF GERALD P. DINNEEN, FOREIGN SECRETARY, NATIONAL ACADEMY OF ENGINEERING, ACCOMPANIED BY PROCTOR P. REID, SENIOR PROGRAM OFFICER

Mr. DINNEEN. Mr. Chairman, Congressman Scheuer, good morning. I have a prepared statement for the record.

I am pleased to be here today to discuss "National Interests in an Age of Global Industry," a title that virtually mirrors that of a report soon to be published by the National Academy of Engineering, "National Interests in an Age of Global Technology." The report, which represents the work of a group of distinguished industry and university leaders, provides much of the gist for my remarks this morning. I have included the report summary and recommendations as an attachment to my prepared statement, which I hope will be included in the record.

The world has changed so rapidly——

Representative HAMILTON. You are speaking on behalf of the academy, are you?

Mr. DINNEEN. On behalf of the academy and myself. I will be making some of my own personal remarks later. The report itself stands by itself.

The world has changed so rapidly over the past two decades that we have exceeded a threshold, as we say in engineering, entering a new state of economic and technological interdependence. This new state results from the acceleration of two mutually reinforcing trends. The first is a growing convergence in technical capabilities of industrialized nations. After World War II, we were the clear leader. Now Japan is a technological superpower, and the unified Europe will certainly be a competitor for us. The second is the global integration of formerly discrete national technical enterprises.

Since the mid-1970's, we have seen the rapid growth of non-U.S. foreign direct investment here in the United States, and the proliferation of transnational corporate alliances. Furthermore, within industries themselves, we see the globalization of production which now includes the full spectrum of corporate technical activities.

This means that a product designed in one country may be based on R&D done in another country, manufactured in a third, and marketed globally. A large company such as Honeywell, where I was vice president for science and technology until my retirement last year, do this as a matter of course now.

Many industries have reorganized their technical activities on a global basis. Indeed, the technology base of a growing number of industries has become, in effect, transnational. This development, which has resulted in a further blurring of the national identity of corporations, cuts to the very heart of your hearings today on "Who Is Us?"

The identification and documentation of these changes in the global economy have by no means quelled the debate regarding the significance of these trends or their implications for private or public policy. I believe the recently released National Academy of Engineering report contributes significantly to this debate. This report has recommendations I endorse wholeheartedly.

It argues that the technical and economic vitality of the United States depends increasingly on the ability of companies operating within our borders to harness and exploit globally dispersed resources and technical capabilities rapidly and effectively. While acknowledging that the private sector carries primary responsibility for meeting the globalization challenge, the NAE report argues forcefully for a stronger government role.

The major conclusion of the NAE report is that if we want to maintain the health of our technology base and generate wealth, this nation's "highest priority must be to make the United States a more attractive and advantageous place for individuals and companies, regardless of national origin, to conduct the full complement of technical activities critical to the Nation's long-term prosperity and security. To accomplish this, the United States must develop the necessary human, financial, physical, regulatory, and institutional infrastructures to compare more advantageously with other nations in attracting the technical, managerial, and financial resources of globally active private corporations and individuals."

Moreover, the public and private policies and actions to achieve these objectives should be consistent with the positive sum dynamic of globalization. That is, we believe that really benefits all parties, and that is not protectionist or beggar-thy-neighbor in orientation.

To this end, the report outlines a number of domestic and policy directions. I will mention just a few.

First, asserting that the rapid growth of technical competence beyond U.S. borders has made it increasingly difficult for U.S.-based companies to derive sustained competitive advantages from superior research capabilities alone, the NAE study committee argues for greater emphasis on public policies to support technology diffusion and commercialization, and policies to assist with the development of commercially significant generic technologies.

Second, recognizing the limitations of unilateral policy initiatives and the mounting pressure on national governments to negotiate internationally areas of public policy traditionally viewed as exclusive matters of domestic concern, the report also argues and urges the United States to assume a more aggressive role in pursuit of international consensus regarding trade, foreign direct investment,

antitrust regulation, and other policy areas that impact international technology flows and the technological dimensions of international competitiveness more generally.

The report recommendation which bears most directly on the topic for today's hearing is that concerning the relative importance of corporate nationality in the formulation of public policy. On this issue, the report is quite clear:

Public policy initiatives to strengthen the national technology and industrial base should be guided by the extent to which a corporation genuinely contributes to the national economy. With rare exceptions, such policies should not discriminate among corporations on the basis of nationality of ownership or incorporation, provided there is sufficient reciprocity in the large.

The attached summary and recommendations to the report elaborate these and other recommendations of the academy study committee, recommendations which I heartily support. I would like to close now briefly with just one or two personal views.

My first point is, this is a very complex issue. It is not just a Japanese problem. In fact, there is more direct foreign investment from Europe now than from Japan. Further, it is very complex because, as the report points out, the situation is very different, for example, among construction, aircraft engines, or electronics companies.

My second point, which again builds on the argument of the NAE report, is that the Nation's well-being is dependent on strong public policy actions. The future improvement in standard of living for our people will not occur solely as a result of actions by the private sector. We must recognize that we are in a global economic competition in much the same way that we continue to have a global military competition.

I know from personal experience how much effort has been required to formulate and implement military policies which have contributed to the end of the cold war and the emergence of democracies in Eastern Europe. We could not have accomplished that if we had argued that government had no role or simply that people of good will would prevail. We could not have accomplished it without major government commitments in resources.

But what of our economic competition? There are some who are afraid to even discuss policies because industrial policy is not a valid government concern, or is not believed to be. I am not concerned with what we call it, but I am concerned that unless we invest in the formulation and implementation of technological and economic policies to cope with this new global order, we will continue to lose ground. I am also convinced that even if we do invest, the job will be difficult and take a long time. Do not expect a quick answer.

I just want to congratulate the committee, in closing, on having this opportunity, this forum, for this debate. I look forward to your questions, and will offer perhaps some specific options later. But for now, this will be the statement I wish to make.

Thank you.

[The prepared statement of Mr. Dinneen, together with an attached report, follows:]

PREPARED STATEMENT OF GERALD P. DINNEEN

Mr. Chairman and members of the Joint Economic Committee, I am Gerald P. Dinneen of Edina, Minnesota. I am the Foreign Secretary of the U.S. National Academy of Engineering. Prior to joining the Academy in 1988, I have worked in both the private and the public sector, most recently as Vice President of Technology at Honeywell Corporation, preceded by a term as Assistant Secretary of Defense during the Carter Administration, and seven years as Director of Lincoln Laboratory at MIT. I am pleased to be able to appear before you to discuss, "National Interests in an Age of Global Industry," a title that virtually mirrors that of a report soon to be published by the National Academy of Engineering, National Interests in an Age of Global Technology (National Academy Press, 1990). The report, which represents the work of a group of distinguished industry and university leaders provides much of the gist of for my remarks this morning. I have included the report's summary and recommendations as an attachment to my written testimony.

The principal thesis of the Academy study is that "the rapid globalization of technology during the past two decades," has

"fundamentally altered the terms of the traditional competitiveness debate," thereby raising new challenges and demanding new, creative responses from corporate executives, university administrators and public policymakers as they seek to advance economic interests of their individual constituencies and those of the nation as a whole.

The world has changed so rapidly over the past two decades that we have exceeded a threshold, as we say in engineering, entering a new state of economic and technological interdependence. This new state results from the "acceleration of two mutually reinforcing trends. The first is a growing convergence in technical capabilities of industrialized nations. and the global integration of formerly discrete national technical enterprises." Following World War II, we lived in a technologically unipolar world in which U.S. technological preeminence was unrivalled. Japan is now a technological superpower; a unified Europe will be competitive with the United States. Accompanying this global redistribution of technical capabilities has been a second trend, the integration of formerly discrete national technical enterprises through the activities of multinational corporations.

Since the mid-1970s, these two trends -- increasing global technological convergence and interdependence -- have given rise to a new internationalization paradigm; one characterized by the rapid growth of non-U.S. foreign direct investment and the proliferation of transnational corporate alliances. Furthermore,

within this new paradigm, the globalization of production now encompasses the full spectrum of corporate technical activities, all the way from research through design and development to production and distribution.

In more concrete terms, the new globalization means that a product designed in one country, may be based on R&D done in another country, manufactured in a third, and marketed globally. Large companies such as Honeywell, where I was Vice President of Science and Technology until my retirement last year, do this as a matter of course now. Many industries have reorganized their technical activities on a global basis. Indeed, the technology base of a growing number of industries has become in effect transnational. This development, which has resulted in a further blurring of the national identity of corporations, cuts to the very heart of today's hearings on "Who Is Us?"

The identification and documentation of these changes in the global economy have by no means quelled debate regarding the significance of these trends or their implications for private strategies and public policies. On the one hand there are those who believe that the United States should still strive to be technologically self-sufficient and rely on the technical superiority of its indigenous companies to sustain an advantageous position in the world economy. Others, while accepting the logic and potential benefits of increased international interdependence, argue that meeting the challenge of international competitiveness is properly the responsibility

of the private sector and that government does not need to play any stronger role than it has in the past.

Joining the debate, the recently released National Academy of Engineering report, whose recommendations I endorse wholeheartedly, argues that the technical and economic vitality of the United States depends increasingly on the ability of companies operating within its borders to harness and exploit globally dispersed resources and technical capabilities rapidly and effectively. While acknowledging that the private sector carries primary responsibility for meeting the globalization challenge, the NAE report argues forcefully for a stronger government role, more specifically a reorientation of U.S. public policies to reflect the new global realities of technical convergence and interdependence.

The main conclusion of the NAE study is that if we want to maintain the health of our technology base and generate wealth, this nation's "highest priority must be to make the U.S. a more attractive and advantageous place for individuals and companies, regardless of national origin, to conduct the full complement of technical activities critical to the nation's long-term prosperity and security. To accomplish this, the United States must develop the necessary human, financial, physical, regulatory, and institutional infrastructures to compare more advantageously with other nations in attracting the technical managerial, and financial resources of globally active private corporations and individuals." Moreover, public and private

policies and actions to achieve these objectives should be consistent with the positive-sum dynamic of globalization, that is, not protectionist or beggar-thy-neighbor in orientation.

To this end, the study outlines a number of domestic and international policy directions. I draw your attention to two sets of recommendations in particular. First, asserting that the rapid growth of technical competence beyond U.S. borders has made it increasingly difficult for U.S.-based companies to derive sustained competitive advantages from superior research capabilities alone, the NAE study committee argues for greater emphasis on public policies to support technology diffusion and commercialization, and policies to assist with the development of commercially significant generic technologies.

Second, recognizing the limitations of unilateral policy initiatives and the mounting pressure on national governments to negotiate internationally areas of public policy traditionally viewed as exclusive matters of domestic concern, the report also urges the United States to assume a more aggressive role in the pursuit of international consensus regarding trade, foreign direct investment, antitrust regulation, and other policy areas that impact international technology flows and the technological dimensions of international competitiveness more generally.

The report recommendation which bears most directly on the topic for today's hearing is that concerning the relative importance of corporate nationality in the formulation of public policy. On this issue, the report is quite clear. "Public

policy initiatives to strengthen the national technology and industrial base should be guided by the extent to which a corporation genuinely contributes to the national economy. With rare exception, such policies should not discriminate among corporations on the basis of nationality of ownership or incorporation, provided there is sufficient reciprocity in the large."

The attached summary and recommendations to the report elaborate these and other recommendations of the Academy study committee; recommendations which I heartily support. This morning, however, I would like to add some of my personal views.

My first point is that this is a complex issue. It is not just a Japanese problem; in fact, there is more direct foreign investment from Europe than from Japan. Further, it is complex because, as our report points out, the situation is very different, for example among construction, aircraft engines, and electronics.

My second point, which again builds on the argument of the NAE report, is that our nation's well-being is dependent on strong public policy actions. The future improvement in standard of living for our people will not occur solely as a result of actions by the private sector. Let me talk in broad terms before suggesting some specific options.

We must recognize that we are in a global economic competition in much the same way that we continue to have a global military competition. I know from personal experience how

much effort has been required to formulate and implement military policies which have contributed to the end of the Cold War and the emergence of democracies in Eastern Europe. We could not have accomplished that if we had argued that government had no role or simply that people of good will would prevail. We could not have accomplished it without major government commitments in resources--including institutions specifically designed for this purpose and the development of experts in government, academe, and laboratories.

But what of our economic competition? There are some who are afraid to even discuss policies because "industrial policy" is not a valid government concern. I am not concerned with what we call it, but I am concerned that unless we invest in the formulation and implementation of technological and economic policies to cope with this new global order we will continue to lose ground. I am also convinced that even if we do invest, the job will be difficult and take a long time. Do not expect a quick answer. This is in many ways a more complex issue than military security policy and we've been at that for a long time.

Now let me turn to some options. I need to begin by explaining that I am an engineer and therefore understand best the technological dimension of the international competitiveness issue. However, as I said in my second point, it is a complex issue and not solely a technology issue. In order to improve the nation's ability to prosper in a global economy, we need to achieve a more favorable rate of growth of productivity and

economic output. This in turn depends on expanding the nation's stock of capital, labor, and technology, and improving the efficiency with which these resources are organized and employed.

Consequently, I would like to suggest some options for your consideration. I should note that the general thrust of many of the following suggestions are picked up either directly or indirectly in the aforementioned NAE report. However, the following specific recommendations are my own and do not necessarily correspond with those of the NAE study committee.

First, I concur with those who stress the need for tending to fundamentals, particularly the cost and availability of capital and the capabilities of the nation's workforce. Although there is some controversy, I believe that the cost of capital is higher in the United States than it is, for example, in Japan, and the cost of equity seems to be higher than the cost of debt. Therefore, fiscal actions which encourage savings and long-term investment would be desirable as, for example, some kind of tailored capital gains tax, or less onerous tax treatment of the returns on equity.

As Bob Reich pointed out to you in his testimony earlier, the labor force is less mobile than either capital or technology. Consequently, improvements in our education system, particularly K-12, and especially in math and science, is an urgent requirement for our international competitiveness.

With respect to technology development, there are several options which I personally think you should consider.

I believe there are key generic technologies which can and should be supported by the government in cooperations with private industry without interfering with our competitive free enterprise system.

I believe there are further changes in the antitrust regulations which would encourage precompetitive research consortia and cooperation without fostering counterproductive anticompetitive behaviour.

I favor fiscal actions, such as R&D tax credits, which create incentives for industry to invest in long-term R&D.

Nevertheless, as the Academy report suggests, stronger technology development capabilities by themselves will not address the more pressing vulnerabilities of the nation's technical enterprise -- that is, the relative decline in the ability of U.S. based corporations to harness, adapt, and exploit existing technology, regardless of origin, for commercial advantage.

Although these are first and foremost problems that must be addressed by the private sector, there is an important role for the public sector in support of private sector technology adoption and diffusion. I believe that the government should devote greater resources to the rather modest initiatives currently sponsored through the National Science Foundation and the National Institute of Standards and Technology, such as the Engineering Research Centers, the Centers for Manufacturing Technology and other efforts at some sort of industry technical

extension service. The federal government might also examine more carefully some of the more successful state and regional initiatives that address these downstream technical activities and help seed similar programs in other parts of the country. I admit, most of these programs are relatively young and as yet unproven. However, I believe they are headed in the right direction and worthy of greater attention than they currently receive.

Although these are primarily domestic options, many benefits will accrue to companies which operate in the U.S., regardless of their nation of origin. I am convinced, however, that the net result of these policy efforts will be positive for the United States.

In the realm of international policies, I second the call by the NAE study committee for the United States to assume a more aggressive role in the effort to develop a constructive international consensus in a range of policy areas that bear on a nation's competitiveness and technological strength, particularly with regard to the mutual obligations of multinational corporations and their home and host governments.

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NATIONAL INTERESTS IN AN AGE OF GLOBAL TECHNOLOGY

A Report of the National Academy of Engineering Committee on
Engineering as an International Enterprise

National Academy of Engineering
Washington, D. C. 1990

REPORT SUMMARY AND RECOMMENDATIONS

The rapid globalization of technology during the past two decades has given new meaning to the concept of interdependence for the United States. To compete effectively at home or abroad, many U.S. companies, universities, and the nation's technical work force as a whole are becoming increasingly integrated into global networks of research, development, production, and marketing through the expansion of international trade, foreign direct investment, and corporate alliances. These developments have challenged long-standing assumptions regarding the autonomy and supremacy of the U.S. technical enterprise and, in so doing, have fundamentally altered the terms of the traditional competitiveness debate.

Since the mid-1970s, there has been an acceleration of two mutually reinforcing trends--the convergence in technical capabilities of industrialized nations and the global integration of formerly discrete national technical enterprises. The technologically unipolar world of the 1950s and 1960s, dominated by the United States, has given way in the past decade and a half to a world in which technical competence and resources are much more dispersed among a number of industrialized and industrializing countries. International comparisons of patenting, R&D spending and personnel, high-tech trade and production, and foreign direct investment since the mid-1970s all evidence this trend.

In concert with this profound change in the global distribution of technical capabilities, the organization of the advanced technical activities of corporations has become increasingly transnational. From the end of World War II to the early 1970s, the internationalization of production was driven primarily by U.S. foreign direct investment. During this period, production in many industries became increasingly multinational or global, but advanced technical activities such as research and development remained predominantly "national," that is, concentrated in the major corporations' home country. During the last decade and a half, however, a new model of internationalization has emerged, characterized by the rapid growth of non-U.S. foreign direct investment and a proliferation of transnational corporate alliances. The globalization of production in the 1980s and beyond encompasses the full spectrum of corporate technical activities.

Responding to the challenges and opportunities of increased global competition, shorter product cycles, national "managed trade" policies of varying scope, wider markets, and a growing number of globally dispersed sources of new technology and technical competence, transnational companies in many industries have reorganized their technical activities on a global basis. U.S.-based corporations have taken the lead in decentralizing and dispersing their own advanced technical activities internationally, developing and acquiring more of their technology abroad. During the 1980s, transnational corporate alliances, a majority of them involving U.S. corporations, emerged as a major vehicle for gaining

access to foreign markets and technology. Although U.S.-based multinationals have been forerunners of a trend, they are not alone. As their technical prowess and foreign direct investments have expanded, a growing number of foreign corporations have also begun to reorganize their advanced technical activities more internationally and to assume a more active role in the creation of transnational technical alliances.

The convergence of national technical capabilities and the globalization of advanced technical activities at the hands of multinational corporations underline the growing economic and technical interdependence of nations. The committee is convinced that the globalization of R&D, production, investment, markets, and technology is a positive trend for both the United States and the rest of the world, although it is not without its problems. To be sure, the economic, technical, and political imperatives of globalization have created an international environment in which technical capabilities that many deem essential to a nation's continued prosperity and security can be eroded swiftly by intense competition from abroad. Nevertheless, the committee agrees that the benefits and opportunities provided by the globalization trend outweigh any adjustment costs that follow in its wake. Not only does the globalization process accelerate transnational integration and cross-fertilization in engineering, technology, and management, it also promises to enhance the diversity and depth of world engineering and scientific resources and thereby stimulate economic growth and technology development. Most important, the globalization of technical activities cannot be reversed or significantly impeded by national governments without inflicting high costs on their citizens.

As the past decade has made clear, however, increased international interdependence has not diminished the competitive pursuit of economic and technical advantage by nations. Nor have the benefits (real and potential) of globalization dissuaded governments from pursuing policies that run counter to the larger trends. Governments worldwide have long intervened in their domestic economies to increase the productivity and international competitiveness of firms operating, if not originating, within their borders. However, as more countries have recognized the importance of technical advance for economic growth and competitiveness, governments have focused more on creating a domestic environment conducive to developing, applying, and diffusing advanced technology for commercial advantage. In this quest for economic advantage, nations rely on a range of policy instruments. Some of these are more interventionist, such as "managed trade," domestic content legislation, or "closed" national technology development initiatives; others are more market-oriented, such as deregulation or investments in education and economic infrastructure.

This new technology-oriented competition among nations is greatly complicated by the blurring of corporate nationalities and the lack of internationally accepted rules of behavior for companies and their home and host governments. As private corporations, which have long been viewed as the mainstays of a nation's commercial technical enterprise, have become more cosmopolitan in outlook and

conduct, the relationship between corporate interests and national interests has grown increasingly complex. It is a relationship that requires more deliberate and careful examination. Indeed, the definition of what constitutes a "domestic" or a "foreign" corporation and the nature of "corporate citizenship" more generally have become more and more vexing issues for public policymakers as the technical activities and resource base of a growing number of corporations become increasingly distributed internationally.

Similarly, the emerging global economic and technical enterprise challenges long standing assumptions regarding the relatively neat dichotomy of domestic and international policy areas related to national competitiveness. To deal effectively with the domestic and international political friction that accompanies the globalization trend, national governments are being called upon to negotiate internationally areas of public policy traditionally viewed as exclusively matters of domestic concern.

The changing character of competition among corporations and the competitive pursuit of economic advantage among nations in an age of increasing international technical interdependence pose several major challenges for the United States. More than any other advanced industrialized country, the United States has long considered itself technologically self-sufficient and has relied heavily on the technical superiority of its indigenous companies to sustain an advantageous position in the world economy. Although the United States remains the world's most technologically self-sufficient country, its economic prosperity and technical dynamism have already become highly dependent on foreign technology, capital, and markets and are likely to become more so in the coming decades. Indeed, the technical and economic vitality of the United States depends increasingly on the ability of companies operating within its borders to harness and exploit globally dispersed resources and technical capabilities rapidly and effectively.

In addition, the rapid growth of technical competence beyond U.S. borders has made it increasingly difficult for U.S.-based companies to derive sustained competitive advantages from superior research capabilities alone. As foreign nations and companies have acquired greater technical capabilities, new knowledge or basic research increasingly has become a "global public good," impossible to bottle up within any one nation's borders, and easily accessible to any and all takers. To prosper in this environment, it is becoming imperative that U.S.-based corporations compete effectively at every step along the way in the conversion of scientific discoveries into commercial services or products. Although the United States is renowned for the strength and breadth of its research enterprise, a growing number of U.S.-based companies appear to be at a disadvantage in relation to their Japanese and other foreign competitors in the downstream technical activities critical to leveraging technology for commercial advantage--technology development, acquisition, adaptation, and diffusion.

Drawing on a series of industry case studies, the proceedings of committee meetings and a major symposium,¹ and the views of many knowledgeable representatives from government, industry, and academe

in North America, Western Europe, and Asia, this study argues for more explicit recognition of the emerging global technical enterprise and its profound implications for private strategies and public policies. In the judgment of the committee, the national and international policy debate must be recast to square with the realities of global technical convergence and interdependence.

CAPTURING THE BENEFITS OF GLOBAL TECHNICAL ADVANCE

The highest priority for strengthening the technical foundations and thereby the long-term wealth-generating capacity of the U.S. economy must be to make the United States a more attractive and advantageous place for individuals, companies, and other institutional entities, regardless of national origin, to conduct the full complement of technical activities critical to the nation's long-term prosperity and security. To accomplish this, the United States must develop the necessary human, financial, physical, regulatory, and institutional infrastructures to compare more advantageously with other nations in attracting the technical, managerial, and financial resources of globally active private corporations or individuals. This is the single most important conclusion of the study.

Clearly, all sectors of U.S. society--industry, government, and both basic and higher education--have important roles to play in this effort. The committee has focused primarily on public policy implications, but it does not believe that public policies are the only or even the most important determinants of national or corporate technical strength and competitiveness.² Rather, the study's public policy focus has been shaped by the fact that the public sector is groping to formulate and implement a national agenda that can address the imperatives of a highly integrated global economic and technical order.

The government must take action on many fronts to strengthen the foundations of the U.S. technical enterprise--the nation's work force, its social capital (i.e., educational system and public infrastructure), as well as its fiscal and regulatory environment. Above all, state and federal policymakers must work together with corporate and academic leaders to develop a broad national consensus regarding the need to improve technology development, adoption, adaptation and diffusion throughout the U.S. industrial economy. This consensus, in concert with other national policies, can provide the necessary impetus, coherence, and operational guidelines for the many diverse private and public policy actions required to meet the challenges of globalization.

DOMESTIC POLICY DIRECTIONS

Among the greatest comparative strengths of the nation's technical enterprise are its research capabilities, its system of advanced technical education, its large pool of elite technical

talent, and its extensive, sophisticated information technology infrastructure. These comparative advantages find expression in continuing U.S. commercial leadership in highly science-intensive industries or industries in the infancy of their technology life cycle. Moreover, the nation's extensive research enterprise provides the human and intellectual resources for much of U.S. high-technology industry, attracts foreign talent and investment to the country, and benefits U.S. citizens in many other ways. In the opinion of the committee, it is imperative that the United States continue to build on these comparative strengths.

The recent intensity of global competition and the pace of technical advance have underlined the growing importance of synergies between basic research and downstream technical activities such as product and process design, development, and production in many industries. Nevertheless, the past two decades have also demonstrated that as new knowledge flows more freely across national borders, the ability of a nation or a firm to exploit research results for commercial advantage depends increasingly on mastery of those downstream technical activities.

This trend is particularly troublesome for the United States, which continues to harbor the world's most extensive and productive basic research enterprise even as the ability of many U.S.-based industries to adopt and adapt technology for commercial gain appears to have declined relative to other nations. The inability of many U.S.-based industries to derive what many consider a fair share of commercial benefits from an increasingly global technology base underlines the need for U.S. educators, industrialists, and policymakers to direct greater attention and resources toward "relearning" these vital activities--competencies closely associated with the production of goods and services in which the United States excelled from the late 1800s well into the mid-1900s.

The committee views the following domestic policy directions as essential elements of a more comprehensive technology strategy for the United States.

o Policymakers should expand support for initiatives at the federal, regional, and state levels to enhance the adoption, adaptation, and diffusion of technology and related know-how. Current federal science and technology policies are targeted primarily on basic research and "mission-oriented" technology development related to national defense, public health, and space exploration. While reinforcing the current U.S. comparative advantage in certain highly science-intensive or "emerging technology" industries, this policy orientation essentially neglects national vulnerabilities in technology adoption, adaptation, and diffusion, which are equally critical to national economic growth and industrial competitiveness.

Recent U.S. experience has demonstrated that low-cost, pragmatic initiatives at the state, regional or federal level can effectively support private-sector progress in these areas. The National Science Foundation's Engineering Research Centers, the National Institute of Standards and Technology's Centers for

Manufacturing Technology, Ohio's Thomas Edison Program, Pennsylvania's Ben Franklin Partnership Program, the Southern Technology Council, and the Industrial Technology Institute are promising means for providing public support for a diverse set of initiatives and selectively broadening the application of those that prove most successful (see National Academy of Engineering, 1990; National Governors' Association, 1988; National Research Council, 1990b; Pennsylvania Department of Commerce, 1988)³.

o U.S. public policy should acknowledge the need for a stronger public role in support of generic technologies and establish credible mechanisms for translating this commitment in principle into specific actions. There is a need for the United States to develop more focused national or regional infrastructures for supporting the development and diffusion of commercially significant generic technologies. Such technologies involve concepts of design, fabrication, and quality control applicable to a class of products, for which (a) the anticipated returns from development and commercialization cannot justify the expense and risk of investment by single firms or joint ventures; and (b) the returns to the economy and society as a whole warrant investment by the federal government. In addition, there may be areas in which national military strategic considerations that make loss of U.S. technology position or of market share unacceptable.

Promotion of commercially significant generic technologies need not require major investments in research and development programs. Indeed, obstacles to the diffusion of such technologies may be more important than any obstacle to their development. To be sure, significant public and private investment may be required in certain cases, as in the development of a new generation of semiconductors, when the cost of technological advance is so high, the time scale of technology development is very long, and the ability of any one firm to benefit from such large investments is so low or unpredictable that no firm is willing to take the risk. For other generic technologies, however, development costs may not be high--or the technology may already be available--yet there may be serious economic, regulatory, or societal obstacles to the adoption, adaptation, and diffusion of the technology either within or across industries. For example, "total quality control" methods, computer-aided design, advanced construction techniques, and just-in-time production systems are all generic technologies that might fall into this category.

There is, at present, considerable debate regarding the proper government role in support of generic technologies. In the opinion of the committee, the primary roles of government should be as convener and catalyst of such activities undertaken in the private sector and may also involve harnessing the technical resources of the nation's federal laboratories more directly in support of high-cost, high-risk, nonappropriable generic technology development. In some cases this may involve federal matching of a significant amount of private funding. However, in most instances the government should be prepared to serve as the "pathfinder," providing more indirect fiscal

or regulatory support to private-sector participants.

Ultimately any effort to provide government support for the development and diffusion of generic technology in the United States will depend on the credibility of the public and private institutional mechanisms designated to assess and identify those technologies most in need of attention and to chart an appropriate policy response. The committee notes that there have been several attempts by federal agencies to identify "critical" technologies in recent months, most notably by the departments of Commerce (1990) and Defense (1990). The mixed reception of these efforts in the U.S. policy community, however, underlines the need for institutions that assume this charge to be perceived as technically expert, responsive to the interests of all U.S. citizens--consumers, producers, and suppliers--and predisposed to operate in a manner consistent with emerging global economic and technological realities.

o Public policy initiatives to strengthen the national technology and industrial base should be guided by the extent to which a corporation genuinely contributes to the national economy. With rare exception, such policies should not discriminate among corporations on the basis of nationality of ownership or incorporation, provided there is sufficient reciprocity in the large. Public sector assistance to, or collaboration with, private corporations (domestic or foreign) in pursuit of national objectives should be governed by common standards for the corporate role in the U.S. economy. It is entirely appropriate that policymakers charged with advancing the interests of all U.S. citizens should develop criteria consistent with that charge regarding corporate participation in any venture involving public funds or legal exemptions. In a global economy with globally active corporations, however, corporate nationality is a poor measure of a firm's real or potential contribution to U.S. national interests. There may be circumstances in which the U.S. government should discriminate against foreign-owned firms temporarily to achieve reciprocal equitable "national treatment" of U.S. companies doing business overseas or to safeguard national security. However, nondiscrimination with regard to corporate nationality should remain a key principle of U.S. public policy.

o State and federal governments should redouble their efforts to modernize and strengthen the nation's work force and public infrastructure and to encourage continuous modernization of plant and equipment in private industry. The continuing globalization of technology and the resulting intensification of competition among firms and nations impart an increasing sense of urgency to this familiar recommendation (see Council on Competitiveness, 1988; National Academy of Engineering, 1988a, 1988b; President's Commission on Industrial Competitiveness, 1985). New technology by itself will not generate the wealth or productivity increases necessary to increase the standard of living of U.S. citizens and strengthen U.S. national competitiveness. These objectives demand that the United States devote greater attention to the social and human capital that

supports the technological capabilities and commercial vitality of corporations based or operating in the United States. Public sector investment in the nation's educational system and physical infrastructure is vital. Government should create a fiscal and regulatory environment that will encourage private industry to invest in plant, equipment, and organizational learning that will enable it to develop, adopt, and adapt technology more effectively for commercial gain.

o Government should devote greater attention to the technological dimensions of international trade, investment, competition, and other critical issues not traditionally associated with science and technology concerns. To this end, government should seek to cultivate greater technical expertise in agencies responsible for domestic and international economic policy, and to improve interagency communication and coordination regarding science and technology issues. The development and commercialization of technology are not a discrete policy issue but an integral part of many broader areas of domestic and foreign policy. Until recently, there has been insufficient appreciation of implications for science and technology policy initiatives across agencies. There has been even less communication and cooperation among those responsible for formulating and implementing domestic and foreign policies that bear on the health of the nation's commercial technology base. This situation argues for expanding recruitment of technically competent personnel by agencies that formulate and implement domestic and international economic policy and also points up the need for greater organizational focus at the national level on the policies affecting commercial development and application of technology.

The committee notes with guarded optimism the positive steps by the current administration to provide more organizational focus through the President's Science and Technology Adviser, recently elevated to the position of Assistant to the President, the President's Council of Advisers on Science and Technology, the Office of Science and Technology Policy, the newly created Office of Technology Policy in the Department of Commerce, and Commerce's National Institute of Standards and Technology. These bodies clearly have the potential for improving intragovernmental communication and coordination across a range of domestic and international policy areas related to technology and economics. Ultimately, it is of secondary importance whether the necessary organizational focus is located in a single independent agency (existing or to be created) or finds expression in more institutionalized interaction among the many agencies and committees that currently influence the nation's technology base. What is critical is that those seeking to develop greater organizational focus acknowledge the growing synergies between what have traditionally been viewed as discrete policy areas.

INTERNATIONAL POLICY DIRECTIONS

The increasingly global character of corporate technical

activities has made it essential that policies aimed at developing and better managing the nation's technical endowments be outward looking--consistent with an international policy framework that fosters and structures technological competition, cooperation, and exchange among nations and firms. Ultimately, the nation's ability to capture a fair share of the benefits of the global technical enterprise will depend primarily on the extent to which private corporations operating within its borders seize the opportunities presented by the emerging global technology base. Their success or failure, however, will be conditioned by the extent to which U.S. policymakers recognize the interdependence of domestic and international policies that influence technology development, diffusion, and commercialization.

In foreign relations, there are a number of things the United States can do to complement domestic efforts, promote more reciprocal technical exchange, and attenuate tendencies toward technology-based protectionism. There is an obvious need for continued efforts to liberalize world trade as well as greater public and private involvement in the international standards-setting process, and in the quest for a more effective international intellectual property rights regime. Yet, these high-profile concerns are distracting policymakers from equally important issues raised by the rapid growth of foreign direct investment and transnational corporate alliances and technical networks over the past decade. From the perspective of the U.S. technical enterprise, the most important challenges to U.S. foreign economic policy relate to national disparities in the treatment of foreign direct investment and competition policy.

o The United States should seek to forge multilateral consensus regarding the mutual obligations of multinational corporations and their home and host governments. In an effort to improve the nation's trade balance, and to respond more forcefully to a lack of reciprocity overseas, some recent U.S. legislation raises issues related to the free flow of foreign direct investment and the treatment of subsidiaries of foreign-owned corporations.⁴ The rapidly increasing foreign penetration of the U.S. economy in the past two decades has generated a great deal of concern among many segments of the American electorate. Furthermore, the discriminatory treatment of U.S.-owned corporations appears to be a fact of life in Japan and to be increasing in Western Europe as the countries of the European Community search for ways to come to terms with intensifying global competition and the consequences of EC 1992. Nevertheless, discriminatory policies are not consistent with global economic and technological realities and may be counterproductive in the long run. In the committee's judgment, such policies would be detrimental to U.S. national interests. Given the extent of U.S. global technological interdependence, and the many contributions of the U.S. subsidiaries of foreign firms to the U.S. economy and technical enterprise, it is particularly important that the U.S. market remain open to foreign direct investment and that, as far as possible, such open-market policies be reciprocal.

The committee recognizes that there are many troubling issues

raised by the recent growth in foreign control over U.S. industrial assets and the extent to which foreign multinationals draw upon the U.S. research enterprise. It does suggest, however, that it is time for a more multilateral approach to foreign direct investment--an approach that acknowledges the pervasive character and positive contributions of foreign direct investment in an effort to arrive at mutually beneficial "rules of the game" for both transnational corporations and their home and host countries. Good corporate citizenship is becoming ever harder to define as the operations of U.S. and foreign-owned firms become increasingly transnational. An aggressive U.S. effort to forge multilateral consensus regarding the mutual obligations of multinational corporations and their host governments would do much to reduce tendencies toward technology-oriented protectionism worldwide as well as expand international technology exchange.

o U.S. policymakers should strive for greater uniformity in antitrust policy at the international level. There is mounting pressure on policymakers throughout the industrialized world to reinterpret national antitrust law or competition policy to fit the realities of global competition and avoid disadvantaging their indigenous firms in the global marketplace. Nevertheless, in the context of the current surge of foreign direct investment and the proliferation of transnational corporate alliances and mergers, often in already highly concentrated industries, unilateral approaches to antitrust regulation pose two major hazards.

On the one hand, relaxation of antitrust requirements by the world's leading economies may increase opportunities for monopoly abuse in certain industries and actually impede technological advance. Although there is little evidence of anticompetitive behavior in manufacturing and service industries at the international level, alliances among former competitors in certain industries and the rising barriers to market entry as a result of the spiraling cost of technical advance create an environment in which anticompetitive behavior is increasingly credible. Despite the possible benefits of interfirm collaboration, it is essential to uphold competition as a major driver for technological advance and structural adjustment.

On the other hand, there is some evidence that national competition or antitrust laws may impede cross-border mergers and acquisitions that do not undermine competition. Such policy-induced obstacles to international competition may also impede technological advance and economic growth.

Both the danger of anticompetitive abuse by global companies and the costs of "protectionist" antitrust regulation emphasize a growing need for greater international cooperation in antitrust policy. Multilateral discussion of this issue within the General Agreement on Tariffs and Trade and the Organization for Economic Cooperation and Development warrants greater attention and resolve from all industrialized nations, including the United States.

1. "National Interests in an Age of Global Technology," sponsored by the National Academy of Engineering 4-5 December 1989 in Irvine, California.
2. For more extensive discussion of the implications of globalization for corporate strategy, see the recent report on the internationalization of U.S. manufacturing issued by the National Research Council (1990a).
3. The Southern Technology Council is based in Research Triangle Park, North Carolina; the Industrial Technology Institute is based in Ann Arbor, Michigan.
4. Consider, for example, the Exxon-Florio amendment to the Omnibus Trade and Competitiveness Act of 1988, or the spate of bills currently pending in Congress including the American Technology Preeminence Act (H.R. 4329), Technology Corporation Act of 1990, and others that seek to spell out in legislation specific "special" requirements for foreign-owned or foreign-controlled firms' participation in publicly funded research and development initiatives.

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Representative HAMILTON. Mr. Dinneen, thank you very much. We have the bells ringing for a vote, so we will have a recess here for just a few minutes, come back, and we will begin with you, Mr. Peterson.

[A short recess was taken.]

Representative HAMILTON. Mr. Peterson, we will begin with you.

STATEMENT OF DEAN A. PETERSON, CONSULTANT, EMERGENCY COMMITTEE FOR AMERICAN TRADE

Mr. PETERSON. Thank you, Mr. Chairman, members of the committee. Thank you for the opportunity to testify on the issue of the impact of foreign direct investment on U.S. competitiveness.

My name is Dean Peterson. I am an independent business consultant. Prior to the arrival of the "Barbarians at the Gate," and the subsequent LBO, restructuring, and downsizing of RJR Nabisco, I was that company's chief economist and director of industrial studies.

My testimony today is based, in large part, on a major research study I have been conducting on behalf of the Emergency Committee for American Trade. The ECAT study, which is expected to be released later this year, will document the strongly positive linkages between U.S. direct investment abroad, U.S. economic performance at home, and U.S. international competitiveness. The views expressed here today, however, are exclusively my own.

When examining the issue of declining U.S. international competitiveness, the debate revolves around the question of whether or not the cause of the decline is macroeconomics or management. While I will concede that a generation of unprecedented global economic hegemony undoubtedly contributed to a measure of complacency by certain U.S. firms and industries, the primary responsibility for U.S. trade deficits in the 1980's must be laid squarely at the door of U.S. macroeconomic policies, including:

Most importantly, the extraordinary appreciation of the U.S. dollar;

The shortfall of U.S. savings relative to investment;

The more rapid growth of the U.S. economy, particularly in the early 1980's, than those of our principal competitors and trading partners; and

Declining real incomes in major developing countries, particularly Latin America and the Middle East; and as a consequence of those declining real incomes, a shift in the composition of spending away from capital investment, where the United States had, and still has, its strongest competitive and comparative advantage.

The impact of inward and outward direct investment on U.S. competitiveness can only be understood in the context of these underlying determinants of global competitive behavior.

I would like to particularly stress the role of exchange rates. From 1980 to 1985, the trade-weighted value of the U.S. dollar appreciated by 42 percent against its 12 key competitors, by 84 percent against its European competitors, and by 6 percent against the Japanese yen, actually 21 percent if you adjust it for inflation differentials between the two countries.

After the adjustment for differential inflation rates, the real trade-weighted appreciation of the dollar from 1980 to 1985 was 56 percent against our major industrialized competitors. I must stress that no amount of productivity improvement or American managerial prowess could compensate for cost disadvantages of this order of magnitude.

As a consequence, the U.S. merchandise trade balance for manufactures declined from a \$19 billion surplus in 1980 to a \$142 billion deficit in 1987. From 1981 to 1987, the manufactures trade balance deteriorated against every major country. The largest exceptions were Ireland and the Netherlands. It declined for every single U.S. industry group at the two-digit level except for tobacco and petroleum, both special circumstances.

With the weakening of the dollar in the subsequent period, virtually all of these indicators turned around.

But the key point that I wish to emphasize today is that U.S. multinationals are, and are likely to remain, the bulwark of U.S. international competitiveness. And I might add that their overseas operations are a critical component of that international competitiveness.

It is important to put the phenomenon of globalism in a realistic perspective. We do not yet live in a borderless world, and the policies and powers of government matter enormously. As Michael Porter has observed, competitive leadership is created, not inherited, and government policies are more, not less, important in an increasingly interdependent world.

Second, the magnitude of the trend toward globalization appears to have been grossly exaggerated by many analysts, and more important, the implications for the U.S. economy have, in my judgment, been seriously misinterpreted.

I would particularly like to take issue with Professor Reich's characterization of the new global American corporation. In his testimony before this committee, he said:

But the new global American corporation marks a major step in its evolution. A much larger proportion of its work force is foreign; and increasingly it does its most sophisticated work—including research, development, engineering, and complex fabrication—outside the United States.

He proceeded to assert that foreign affiliates' sales, employment, capital spending, R&D, and exports to the United States are all surging, implicitly, to the detriment of U.S. workers and the U.S. economy. He further reports that "approximately one-quarter of America's trade deficit is attributable to American firms which make or buy things abroad and ship them back here."

Finally, he contrasts this dismal performance with that of the inward direct investors in the United States, who create new jobs, new investment, expanding R&D, and who "vigorously export from the United States."

While the anecdotal evidence of rising offshore production and increased foreign sourcing by USMNC's adduced by Professor Reich is fascinating and illustrates the rich diversity of industry structures and competitive strategies, it does not provide a reliable guide to public policy. In an economy as large as that of the United States, a resourceful researcher can find examples to prove almost anything. Public policy should be based upon an informed interpre-

tation of aggregate trends. When such trends are examined closely, one obtains a very different picture, both of the trend of outward foreign direct investment, and of its economic consequences.

The most rapid real and relative growth of U.S. outward foreign direct investment was in the 1960's and early 1970's, when the United States was an unrivaled economic and technological power, and when it was running massive trade and current accounts surpluses.

Let us look at the more recent trend of U.S. multinational activities, as recorded in official government statistics. From 1977 to 1988, sales by U.S. multinational parents rose more rapidly than those of their foreign affiliates. From 1977 to 1988, the assets of U.S. multinational parents increased more rapidly than those of their foreign affiliates.

From 1977 to 1988, employment by foreign affiliates of U.S. multinationals actually declined, both absolutely and relative to U.S. parents. From 1977 to 1989, new capital expenditures by foreign affiliates declined relative to those in U.S. manufacturing. The share of company funded R&D performed outside the United States fell from 9.4 percent in 1980 to 6.0 percent in 1985, before rising to 8.6 percent in 1988.

Many of these shifts basically reflect exchange rate adjustments during the period. The ratio of foreign affiliate R&D to USMNC's worldwide—9 percent—was far lower than the comparable ratios for their sales or their assets. Royalties and license fees earned abroad by USMNC's substantially exceed their foreign R&D expenditures.

Sales by foreign affiliates, with a very few well publicized and generally well understood exceptions like United States-Canadian auto trade and United States attempts to remain competitive in the consumer electronics market, are overwhelmingly to local markets.

Finally, U.S. multinational parents had a substantial trade surplus with their foreign affiliates, and that surplus has been growing in recent years.

A final note on the psychology of globalism. It may come as a surprise to the interpreters and the avid trend watchers of globalism that the proportion of the thousand largest U.S. firms with a foreigner on its board of directors has actually declined from 17 percent in 1982 to 12 percent in 1989.

In short, the factual record demonstrates conclusively that U.S. multinationals have not abandoned either the American economy or the American worker. On the contrary, their global presence is a prerequisite for effective competition in increasingly global markets.

I am currently in the final stages of completing an ECAT study that will document the magnitude of USMNC exports and trade surpluses on an industry-by-industry basis and will explore the impact of affiliate activities on the parent and on U.S. economic performance; it will document the overwhelmingly positive impact of multinationals' trade, capital and income flows on the U.S. balance of payments; and will explore the impact of such investment on the U.S. work force.

Finally, a few comments about inward direct investment. Inward direct investment, like all investment, should be presumed to have a positive impact on the U.S. economy, unless the circumstances convincingly demonstrate otherwise. But we are likely to be extremely disappointed if we are looking to inward direct investors to solve or to materially contribute to solving any presumed problems of international competitiveness for the U.S. economy.

In particular, I would note that the rise in foreign direct investment in the United States has been accompanied by a concomitant rise in the merchandise trade deficit associated with such investment, from \$23 billion in 1983 to a \$90 billion deficit in 1988. The much ballyhooed infusion of R&D by foreign direct investors in the United States also appears to be somewhat less than meets the eye. Roughly one-half of it is by chemical companies, and roughly one-half of that is by a company that we all know and most of us consider to be American—E.I. du Pont. The other half consists of European chemical firms, for the most part drug firms, which have had a long established presence in the U.S. market, and which many of us think of as being as much American as European, for example, Bayer aspirin.

Finally, in these circumstances, what can a government do to capture the benefits of globalism? First, I would suggest that it should pursue fiscal and monetary policies that encourage increased savings and investment and that are likely to result in a realistic exchange rate. Second, it should encourage direct investment worldwide by vigorously pursuing expanded access to foreign markets for both trade and investment.

So does the nationality of corporate investment, corporate ownership and control matter? Yes, it matters a great deal. If the American Government is not committed to advancing the global interests of American corporations, their employees and their shareholders—which are still overwhelmingly American—who will be?

While the interests of U.S. multinationals are not now and have never been synonymous with those of the Government, they are certainly likely to be more so than those of foreign-based internationals.

Thank you very much. I appreciate this opportunity to share my views with the committee.

[The prepared statement of Mr. Peterson, together with an attached appendix, follows:]

PREPARED STATEMENT OF DEAN A. PETERSON

Mr. Chairman, members of the committee, I thank you for the opportunity to testify on the issue of the impact of foreign direct investment upon the U.S. economy and upon our international competitiveness. My name is Dean Peterson and I am currently an independent business consultant. Prior to the arrival of the "Barbarians at the Gate" and the subsequent LBO, restructuring, and downsizing of RJR Nabisco, Inc., I was that firm's Chief Economist and Director of Industrial Studies.

My testimony is based, in large part, on a major research study I have been conducting on behalf of the Emergency Committee for American Trade (ECAT). The ECAT study, which is expected to be released later this year, will document the strongly positive linkages between U.S. direct investment abroad (USDIA), U.S. economic performance and U.S. international competitiveness. The views expressed here today, however, are exclusively my own.

In an effort to assure that both Professor Reich's and the Committee's questions are all answered within the allotted time, I will start with my conclusions:

- If competitiveness is defined in the broadest terms-- meaning basically the level and trend of productivity and our standard of living (hereinafter referred to as basic competitiveness)--the United States actually improved its performance against most major competitors during the 1980's. If it is defined in narrow terms, as manifested in our merchandise trade balance (hereinafter referred to as trade competitiveness), it deteriorated dramatically, but is now rapidly improving.

- The deterioration of the U.S. trade competitiveness through 1986-87 was primarily attributable to U.S. macroeconomic policies--in particular the massive overvaluation of the U.S. dollar through 1985--and therefore its solution must be found primarily in those policies. (See Chart 1)
- Inward direct investment has clearly enhanced U.S. 'basic competitiveness' but, at least in the short-term, its impact on 'trade' competitiveness appears to have been negative. If policymakers are looking to inward direct investment to solve our nations trade competitiveness problems they are likely to be sorely disappointed.
- The benefits of inward direct investment are substantial and obvious -- it typically brings money, technology, jobs, competitive dynamism, and occasionally its own customers and suppliers. From the standpoint both of improving economic efficiency and long-term commitment to host-country goals it seems clearly superior to cross-border portfolio investment. Profit and capital repatriation occurs only after the profits are earned - if then. The risks, apart from the special case of national security concerns, are the same as those with domestic investments -- that they may prove anti-competitive in the broadest sense of that term. The growth of global competition in high-tech industries

would appear to require that competitive impact should be evaluated in both a national and a global context.

- Outward foreign direct investment by American global corporations has clearly enhanced both 'basic' and 'trade' competitiveness as reflected in their technological leadership, strong export performance, growing trade surpluses and positive inward financial flows.
- Outward direct investment by USMNCs, like inward direct investment, is driven by the need for market access. At the time most such investments were initiated, the United States was running large merchandise trade surpluses and enjoyed a steadily growing surplus on investment income. Foreign affiliates established during this period provided the market familiarity, distribution organizations, sales and service capabilities, complementary products, and captive outlets that enabled USMNC's to expand their U.S. exports during the dark competitive days of the early 1980's and set the stage for the dramatic U.S. export expansion of more recent years.
- High-technology industries, which consist preponderantly of USMNC's, have fared better than other U.S. industries in terms of trade competitiveness both during trade debacle of the early 1980's and during the subsequent recovery--in substantial measure because of the

competitive advantages conferred by their global presence.

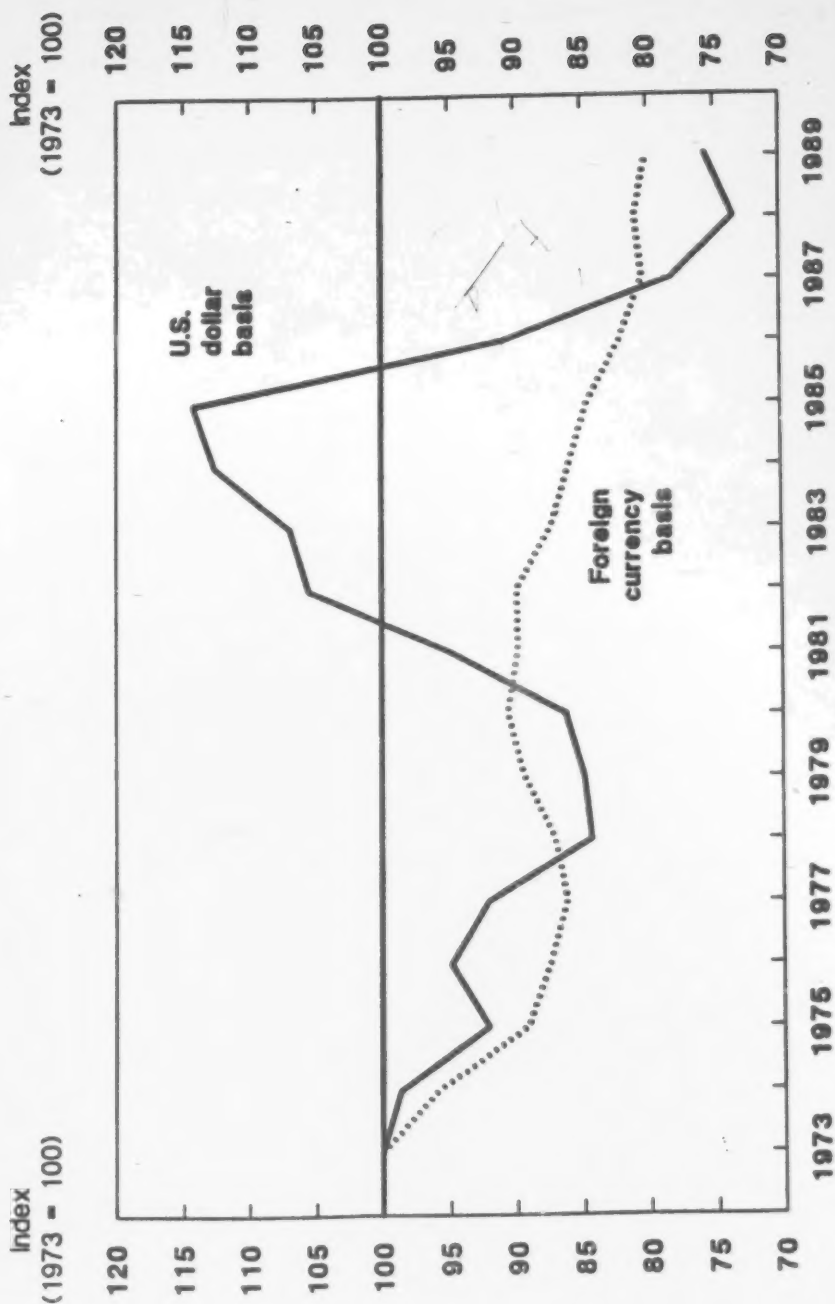
What can government do to capture the benefits of globalization?

- First it must pursue fiscal and monetary policies that encourage increased savings and investment, and that are likely to result in a realistic exchange rate.
- Second, it should encourage increased direct investment worldwide by vigorously pursuing expanded access to foreign markets for both trade and investment.

So does the nationality of corporate ownership and control matter? It matters a great deal. We are not yet in a borderless world as recent developments in both the Middle East and Eastern Europe have demonstrated so forcefully. It may matter a great deal whether a breakthrough in computer technology abroad came from the labs of IBM or those of Fujitsu. It matters in determining where, how and under what conditions acquired technology will be developed. It matters in determining where critical value-added functions will be performed and consequently where the profits will be earned and where they will ultimately be taxed. It matters in small ways such as on its impact on the long-term career opportunities for American employees. Finally, if the American government is not committed to advancing the global interests of American corporations, their employees and their shareholders, who will be? While the interests of U.S. multinational corporations are not now, and have never been, synonymous with those of the government, they are likely to be more so than those of foreign-

based MNC's. Sound policies should not discourage inward investment but should recognize the critical distinctions between inward and outward investment, and the extent to which U.S. national economic and competitive interests continue to be inextricably linked with the viability and prosperity of U.S.-based global corporations.

Chart 1. U.S. manufacturing unit labor costs relative to 12 competitors, 1973-89



APPENDIX

INTERNATIONAL COMPETITIVENESS - MACROECONOMICS OR MANAGEMENT:

While I will concede that a generation of unprecedented global economic hegemony undoubtedly contributed to a measure of complacency among some leading U.S. firms and industries, the primary responsibility for the U.S. trade deficits of the 1980's must be laid squarely at the door of U.S. macroeconomic policies including:

- the shortfall in U.S. savings and the consequent excess of investment over savings,
- the more rapid growth in the U.S. economy than those of most of our principal competitors and trading partners,
- the extraordinary appreciation in the value of the U.S. dollar,
- declining real incomes in major export markets (particularly in Latin America), and
- the shift in the composition of spending away from capital investment (where U.S. has its strongest comparative and competitive advantages) toward consumer spending

The impact of inward - and outward - foreign direct investment on U.S. competitiveness can only be understood in the context of these underlying determinants of the global competitive environment for U. S. business in the 1980's. A brief chronology of global economic trends and their competitive consequences illustrates the importance of those macroeconomic factors -- in particular the

overvalued dollar -- in the deterioration in U. S. trade performance during the 1980's:

- From 1980 to 1985 the trade-weighted U.S. dollar appreciated by 42% against its 12-key competitors* (per BLS-index - see chart), by 84% against our European competitors, and by 6% against the Japanese yen. After adjustment for differential inflation rates, the real trade-weighted appreciation of the dollar was 56% against the other major industrialized countries. (per FRB 10-country index) No amount of productivity improvement or American managerial prowess could compensate for total cost adjustments of this magnitude. The U.S. merchandise trade balance for manufactures declined annually from a \$19 billion surplus in 1980 to a \$109 billion deficit in 1985. (The deficit subsequently rose to \$142 billion in 1987).
- From 1981 to 1987 the manufactures trade balance deteriorated against every major country (Ireland and the Netherlands were the only significant exceptions) and for every 2-digit SIC industry except tobacco and petroleum refining--where lower import prices played a decision role.
- From 1985 to 1989 the trade-weighted dollar fell by 30% in both real and nominal terms. As of early 1990 the Federal Reserve Board's 10-country and 26-country nominal indexes were approximately at 1980 levels. After

adjusting for inflation differentials, the U.S. dollar in early 1990 was still valued 10% above its 1980 rate against major competitors.

- * Europe (except Belgium), Japan, Canada, Korea, and Taiwan.

- From 1986 to 1990 (based on OECD June 1990 projections) U.S. real domestic has been well below that of every major competitor, U.S. real import volume growth has been below that of every OECD country, and U.S. real export volume growth of 15½ annually has been 2 1/2 times that of the rest of the OECD. In 1990 the U.S. has returned to a merchandise trade surplus with Europe for the first time since 1982.
- Export-to-shipment (E-S) ratios for all U.S manufacturers have risen annually from 8.2 percent in 1986 to a record 11.1½ in 1989. (Table 1) Moreover, since 1986 E-S ratios have risen for every single 2-digit SIC industry group.
- The real U.S. merchandise trade deficit turned around in 1987 and has fallen by \$69 billion from 1987 to Jan-June 1990 (annualized). The nominal trade deficit, reflecting the typical J-Curve effect, rose through 1988 but has subsequently fallen by \$57 billion from its 1988 peak. The improvement has been across the board in every end-use category except 'Consumer-nondurables (excluding food and automobiles).'
- High-technology trade, which moved from a \$27 billion deficit in 1981 to a \$1 billion deficit in 1986 has improved thereafter to an \$8 billion surplus in 1988 and appears likely to approaching or surpass its 1981 surplus in 1990. (The Commerce Dept. has not yet completed its SITC concordance for high-tech trade but a review of

A DIFFERENT PERSPECTIVE--U.S. MULTINATIONAL CORPORATION AS BULWARKS
OF OUR GLOBAL COMPETITIVENESS

It is important to put the phenomenon of globalization in perspective. We do not yet live in a borderless world and the policies and powers of governments matter enormously. As Michael Porter has observed, competitive leadership is created, not inherited and government policies are more, not less, important in an increasingly interdependent world. Second, the magnitude of the

trend toward globalization appears to have been grossly exaggerated by many analysts and its implications for the U.S. economy have been grossly misinterpreted.

I would particularly like to take issue with Professor Reich's characterization of "The New Global American Corporation." In his testimony before this committee he stated:

"But the new global American Corporation marks a major step in its evolution. A much larger proportion of its work force is foreign; and increasingly, it does its most sophisticated work -- including research, development, engineering, and complex fabrication -- outside the United States."

He proceeds to assert that foreign affiliates' sales, employment, capital spending, and research and development expenditures and exports to the United States are all surging to the detriment of U. S. workers and the U. S. economy. Professor Reich reports that "approximately one-quarter of America's trade imbalance is attributable to American firms which make or buy things abroad and then ship them back here."

Finally, he contrasts USMNC's performance with the new investment, job creation, expanding R & D, and "vigorous" exporting from the United States associated with inward direct investment.

While the anecdotal evidence of rising offshore production and increased foreign sourcing by USMNC's adduced by Professor Reich is fascinating and illustrates the rich diversity of industry structures and competitive strategies, it does not provide a

reliable guide to public policy. In an economy as large as that of the United States a resourceful researcher can find examples to prove almost anything. Public policy should be based upon an informed interpretation of aggregate trends. When such trends are examined closely, one obtains a very different picture both of the trend of outward foreign direct investment and of its economic consequences.

The most rapid real and relative growth in U.S. outward foreign direct investment was in the 1960's and early 1970's when the U.S. was an unrivaled economic and technological power, and was running massive current account surpluses. Let's look at the more recent trend of USMNC activities abroad as reported in official government statistics:

- From 1977 to 1988 (the most recent year for which data are available) sales by USMNC parents rose more rapidly than those of their foreign affiliates.
- From 1977 to 1988 the parents U.S. assets increased more rapidly than those of their affiliates.
- From 1977 to 1988 total employment by foreign affiliates declined both absolutely and relative to that of their U.S. parents.
- From 1977 to 1989 new capital expenditures by foreign affiliates declined relative to those in U. S. manufacturing.
- The share of company funded R & D performed outside the United States fell from 9.4% in 1980 to 6.0% in 1985

before rising to 8.6% in 1988. (Table 2) The ratio of foreign affiliate R & D to USMNC's worldwide R & D (8.7% in 1982) was far lower than the comparable ratios for sales (29.4%) or assets (26.4%).

- Royalties and license fees earned abroad by USMNC's substantially exceed their foreign R & D expenditures.
- Sales by foreign affiliates, with a few well publicized exceptions (like U.S.-Canadian auto trade and U.S. attempts to match aggressive foreign competition in intensely-competitive consumer electronics markets) are overwhelmingly to local markets.
- Finally, USMNC parents have a substantial trade surplus with their foreign affiliates and that surplus has been growing in recent years.
- A final note on the psychology of "globalism." It may come as a surprise to the avid trend watchers of globalism that the proportion of the 1000 largest U.S. firms with a foreigner on board fell from 17% in 1982 to 12% in 1989. (The Economist, August 11, 1980).

In short the factual record demonstrates conclusively that the U.S. multinationals have not abandoned either the American economy or the American worker. On the contrary, their global presence is a prerequisite for effective competition in increasingly global markets.

I am currently in the final stages of completing a study for ECAT that

- will document the magnitude of USMC exports and trade surpluses on an industry-by-industry basis and will explore the impact of affiliate activities on the parent and on U.S. economic performance.
- will document the overwhelmingly positive impact of USMNC trade, capital and income flows on the U.S. balance of payments
- will explore the impact of USFDI on the U.S. work force.

IMPACT OF FOREIGN DIRECT INVESTMENT IN THE UNITED STATES - (FDIUS)

Inward direct investments, like all investments, should be presumed to have a positive impact on the U.S. economy unless circumstances convincingly demonstrate otherwise. We are likely to be extremely disappointed, however, if we look to FDIUS to solve--or materially contribute toward solving-- any presumed problems of international competitiveness. In particular I would note that:

- The rise in FDIUS has been accompanied by a concomitant rise in the merchandise trade deficit associated with such investment, from \$22.7 billion in 1983 to \$89.9 billion in 1988. (Table 3) (During the corresponding period the merchandise trade surplus of USMNC's improved significantly)
- The much ballyhooed infusion of R&D by FDIUS (totaling \$6.2 billion in 1987) appears to be less than meets the eye. Over one-half (\$3.2 billion) is in a single industry (chemicals, including drugs) with nearly one-

half of that by a company commonly and correctly perceived by most Americans to be American (E.I. Dupont). Most of the remainder is by European drug firms with a long established presence in the U.S. market.

- On a country/area of UBO basis, Japanese firms account for 25% of FDIUS sales but only 5% of the R&D, while European and Canadian firms with 53% and 12% of sales respectively, account for 61% and approximately 25% of total R&D by U.S. foreign direct investors. U.S. R&D expenditures are equivalent to about 6% of home market R&D by European investors but less than 1% for Japanese investors. Finally a growing share of R&D by direct investors would appear to have come through acquisitions of indigenous U.S. high-technology companies such as those of Amdahl, RCA consumer electronics and smaller Silicon Valley firms.

- Acquisitions prompted by managed trade policies, (particularly voluntary export restraints) which account for a substantial share of the growth in FDIUS, rarely address the root cause of an industry's competitive difficulties and therefore cannot be expected to transform losing industries into winners. The efficiency gains from the new competitors may be offset by complacency within the protected sector.

- To the extent that competitiveness leadership depends upon the "convergence" of different technologies and disciplines it seems that the major enduring gains in competitive advantage from acquired technologies would accrue to parent the firm rather than to its affiliates. The ability to control, develop, suppress, allocate, sell and/or license unique technologies would appear to remain an important and valuable corporate prerogative for the foreseeable future.

TABLE 1

U.S. MANUFACTURING SHIPMENTS, MANUFACTURED EXPORTS AND
EXPORT TO SHIPMENT RATIOS

<u>Year</u>	<u>U.S. Manufacturing Shipments</u> (Billion \$)	<u>Manufactured Exports</u> (Billion \$)	<u>Export-to- Shipment Ratio</u> (Percent)
1977	1358.4	93.3	6.9
1980	1852.7	166.7	9.0
1982	1960.2	166.1	8.5
1983	2054.9	157.2	7.7
1984	2254.5	167.6	7.4
1985	2280.2	168.7	7.4
1986	2360.3	172.0	7.3
1987	2390.0	208.4	8.7
1988	2611.6	261.8	10.1
1989	2781.6	308.1	11.1

* SIC Basis as reported by U. S. Department of Commerce, F.a.s. values

Source: SCB, U.S. Business Statistics 1961-88; SIC-Based Trade Data for 1974-87 (unpublished) and "U.S. Manufactures Exports by Industry Group 1987-89", Dept. of Commerce (unpublished).

TABLE 2

RATIO OF R & D PERFORMED ABROAD BY U.S. FIRMS
TO TOTAL COMPANY FUNDED R & D, 1980 - 1988

1980	9.4%
1982	8.7%
1985	6.0%
1987	7.8%
1988	8.6%

Source: National Science Foundation, SRS Survey except 1982 the U.S. Department of Commerce from Benchmark Survey of U.S. Direct Investment Abroad

TABLE 3

**U. S. MERCHANDISE TRADE BALANCE ASSOCIATED WITH
INWARD AND OUTWARD FOREIGN DIRECT INVESTMENT, 1983-88**

<u>Year</u>	<u>Outward Direct Investment</u> (Million \$)	<u>Inward Direct Investment</u> (Million \$)
1983	\$29,620	-22,700
1984	23,322	-36,700
1985	16,443	-50,100
1986	23,866	-76,172
1987	12,475	-95,446
1988	35,849	-89,901
Change 1983-85	-13,177	-27,400
1985-88	+19,406	-39,801
1983-88	+6,229	-67,201

Source: International Direct Investment: Global Trends and the U. S. Role (1988 edition); FDIUS, 1986 and 87, survey of Current business, June & July, 1990; USDIA, 1983 to 1987.

Representative HAMILTON. Thank you very much.
Ms. Tyson, please proceed.

STATEMENT OF LAURA D'ANDREA TYSON, PROFESSOR, ECONOMICS DEPARTMENT AND SCHOOL OF BUSINESS ADMINISTRATION, AND RESEARCH DIRECTOR, BERKELEY ROUNDTABLE ON THE INTERNATIONAL ECONOMY, UNIVERSITY OF CALIFORNIA AT BERKELEY

Ms. TYSON. Congressman Hamilton, Congressman Scheuer, Congressman Upton, panelists and guests, thank you for the opportunity to talk about the national interests in an age of global industry, and to address the issue of who is us? or I think more appropriately, who are we?

The primary objective of economic policy, as I see it, is national economic competitiveness, which means the competitiveness of the United States as a production location. Of course, if you look at competitiveness as a production location issue, geography is destiny and ownership is not. In principle, these hearings must distinguish between the competitiveness of the United States as a production location, and the competitiveness of U.S. companies.

I agree with Mr. Peterson that to some extent the good news is that "we are still we." That is: our companies, even our multinational companies that have globalized for many decades—indeed, were the leaders of globalized industry—still have the predominant share of their activities in the United States.

I did not look at the trends like Mr. Peterson did. I looked at what the situation was in 1988, the year for which the most recent numbers apply. In that year, parent operations in manufacturing accounted for 78 percent of the total assets of U.S. multinational companies. Parent operations in the United States accounted for 70 percent of their employment and about 70 percent of their sales.

In addition, the operations which American-owned multinationals have in the United States are good operations. They are high wage operations; they are high value added operations. If you compare U.S. multinational parent operations with their subsidiary operations in either the developed countries or the less-developed countries, you see that the good jobs are here, and the capital intensity is here, and the assets per worker are here.

The good news is that we are still we. But what about the foreign affiliates of foreign multinationals in the United States. Are they also us? There is no simple answer to this question, in my opinion. Instead of offering an answer in my testimony, I will simply suggest five propositions that I think need to be considered seriously in addressing the issue of the contribution of foreign affiliates to the domestic economy.

The first proposition is: They are becoming more like us but they have a long way to go. The evidence suggests, for example, within manufacturing, that foreign affiliates who are here in a substantial way look a lot like American companies. If you look at indicators like wages per worker, value added per worker, R&D per worker, a foreign affiliate in manufacturing on average looks a lot like an American company in manufacturing.

However, these are average figures; within foreign affiliates there are different kinds of operations, from simple assembly operations to avoid trade measures—such as the Ricoh copier operation in southern California—all the way up to very extensive operations by Honda, which now competes with Chrysler in terms of local content in the United States.

There is a range of what foreign affiliates do in the United States. That suggests that the right public policy question is: Should we ever distinguish public policy on the basis of the kind of foreign operation we are dealing with? Our trade law says we should. Our trade law says that a company may not invest here simply to get around our trade law. I think that is a reasonable position to take. Similarly, do we provide research and development support for a foreign company that has an insubstantial operation here? I think these are the kinds of issues we have to deal with.

Overall, foreign-affiliates are still not very important to the U.S. economy. Again, I agree with Mr. Peterson here. Over the 10-year period 1977 to 1988, which saw the fastest growth of foreign investment in the United States, the share of foreign affiliates in overall U.S. manufacturing doubled, but at the end of the period it was still only about 10½ percent. Basically, foreign affiliates still do not make major contributions to the U.S. economy, at least in terms of their overall weight in the economy.

In the discussion of "who is us" or "are they like us," I would say that they are like distant cousins. They look like us but they are not really members of the family.

Proposition two: Where foreign firms are most like us, our policies have actively encouraged them to be like us. There are substantial foreign auto and consumer electronics operations in the United States. If you ask yourself why these operations are substantial, the answer is that the United States, in a variety of trade actions or threatened trade actions, sent messages to the rest of the world that to have secure access to the U.S. market, a safer strategy was to invest in the United States than to export to the United States.

Trade barriers and threatened trade barriers play an important role in how foreign firms invest. You can look in Europe right now and see a very dramatic development on this score. American companies in the semiconductor industry, American companies in the electronics industry, Japanese companies in a score of industries, are making major investments in Europe. Why? They are concerned that their access to Europe will depend upon the extent of their operations in Europe.

I think it is a mistake in public policy terms to say: Look, these firms are just like us; we do not have to do anything about them. The reason firms make substantial investments in other countries is often that governments either encourage or cajole or compel or threaten them to do so.

One might say that the U.S. Government should not be threatening firms to get them to invest here, and I more or less agree with that. The problem is that other governments are playing this game. The United States, I think, should be a leader in trying to get other countries to give up efforts to attract foreign investment at the expense of other countries.

As long as that game is being played, the United States has to be very careful not to disarm unilaterally, we have no policies; investment comes here if it wants to come here; yet investment is being attracted to Europe, for example, by public policy actions in Europe.

Proposition three: Foreign firms may look like us in the short run, but they may have very different dynamic or longrun effects on the economy. Here I have two things in mind.

The evidence that I presented and Mr. Peterson presented suggests that domestic firms tried to have much more significant operations in the U.S. economy. If a foreign firm comes in and deters the expansion or eliminates the existence of a domestic firm, in the long run the United States loses output, employment, research and development, and exports. You have to consider these longrun effects.

Second, the effects depend very much on industry structure. If a foreign firm buys out a domestic firm or deters the expansion or entry of a domestic firm, the result may very well be a less competitive market structure. This underscores the importance of industry concentration in evaluating the desirability of foreign direct investment.

We claim to do this, but in fact I think we do not. There have been several cases in the past year or so in which the foreign investor represented a threat to a competitive supply base for the domestic economy and the world industry. I am thinking in particular of events in the semiconductor industry and the semiconductor equipment industry. We have allowed foreign buyouts of domestic suppliers to go forward, arguing that the supply effects or the industrial concentration effects are not significant. I think we have been mistaken.

I will give you an illustration of how I think policy might be guided in this way. Sematech is a program for research and development support for the U.S. semiconductor industry. Some people have argued that it is inappropriate for foreign firms to be kept out of Sematech. However, I would argue that if Sematech is to secure a domestic supply base so that the world semiconductor industry will be more competitive, we would not want to allow into Sematech foreign competitors who threaten a worldwide industry concentration of DRAMS. If your objective is a competitive industry, then you might indeed want to support part of that industry as a kind of anticartel or competition policy.

I think one has to look always at the industry structure effect, both short run and long run.

My fourth proposition is, foreign firms may be like us here, but not like us at home. Foreign firms may be allowed to compete with us here, by our rules, but we may not be able to compete with them there by their rules. This is the issue of the level playing field.

My friend Bob Reich, in his article "Who Is Us?" argues, for example, that the U.S. Trade Representative should not be fighting for Motorola's rights in the Japanese market because Motorola makes a lot of its equipment offshore. I would say he is wrong. Motorola has trouble selling in Japan, non-Japanese firms have trou-

ble selling in Japan. In Japan, U.S. companies are not treated like Japanese companies are treated here.

Once you draw this distinction, using policy to fight some of the battles or support some of the objectives of U.S. companies when there is an absence of reciprocity makes sense.

In the extreme case, U.S. companies are disadvantaged by protectionist and promotional policies abroad, in the form of targeting—or explicit protection—for example. The foreign firms in that protected market have generated profits which they then use to mount a challenge to U.S. firms in the U.S. market. This is really the essence of the unfairness argument.

At this point, does the principle of national treatment apply? Should it apply? Should we treat foreign companies in the United States exactly like American companies in the United States when American companies in the foreign market are not treated exactly like foreign companies in the foreign market?

Instead of national treatment, we must consider reciprocity. I think reciprocity is dangerous, I absolutely do. I think it should be avoided; but I do not think it should never be invoked. When do we invoke reciprocity? Under what circumstances?

Here are some possible guidelines. Reciprocity, rather than national treatment, may be the right way to go, if there is a long history of protection in the foreign market, if the foreign market has targeted domestic producers to compete with U.S. producers, or if there is a particularly critical technology involved. Super computers, cellular telephones, and semiconductors are examples of critical technologies.

Finally, proposition five. This is the proposition that they are not us at all. When we are thinking about national security issues, as opposed to purely economic issues, it may very well be the case that foreign firms are not substitutes for domestic firms.

Even diehard free trade economists will argue that when it comes to national defense, we may want to make sure that foreign firms are subject to licensing requirements for their technology, on local content requirements in the United States, on strategic alliance requirements with U.S. producers. We should not be disproportionately dependent on foreign suppliers, particularly when those foreign suppliers have substantial market power in critical technologies.

I conclude from my five propositions that there is no simple rule on whether they are us. Sometimes they are, sometimes they are not. We should inform policy debate with that insight.

Let me say in conclusion that I think the real policy issue for a global economy is not really "who are we?" We need to develop new international rules that force governments to behave in ways that reflect the globalization of industry; we must have much more agreement between the United States, Europe, and Japan on issues of antitrust policy, on issues of reciprocity, on issues of whether there will be any local content restrictions or not.

I want to praise the United States for its leadership in the Uruguay Round in trying to push this set of international issues forward. But out of a sense of political realism, and given that the news from the Uruguay Round is not too good so far, I would say in the short run we are not going to get these new rules. We have

to take policy actions which pursue the national interest, but at the same time do not impede the development of a better international economic order.

Thank you.

[The prepared statement of Ms. Tyson follows:]

PREPARED STATEMENT OF LAURA D'ANDREA TYSON

Mr. Chairman, Members of the Joint Economic Committee, and Fellow Panelists:

Thank you for the opportunity to present testimony on the issue of how to define the U.S. national economic interest in an age of global industry. As you all know, the growing importance of multinational firms, international joint ventures, and foreign investment has blurred the lines between "them" and "us" and raises the question of "Who Is Us?" meaning to what extent domestic and foreign firms contribute to the economic wellbeing of the United States.

The primary objective of national economic policy is national economic competitiveness. It is the competitiveness of the U.S. as a production location on which living standards in the U.S. ultimately depend. Whether the U.S. can offer high-wage jobs to its workers, whether it can afford to support its desired provision of public goods, whether it provides the technological spillovers that drive a virtuous cycle of growth and innovation, all depend on the strength and competitiveness of the economic activities located within its borders. For national competitiveness, geography is destiny; ownership is not.

Following this logic, in a world of multinational

corporations, the U.S. must distinguish between national competitiveness and the competitiveness of American-owned companies. Although this distinction is an important one in principle, in practice it is not as important as many voices in the current debate suggest. Despite several decades of foreign direct investment, the competitiveness of the U.S. economy is still tightly linked to the competitiveness of U.S.-owned companies.

U.S. multinationals still locate the lion's share of their worldwide operations within the U.S. In 1988, the latest year for which data are available, U.S. parent operations accounted for 78% of the total assets, 70% of the total sales and 74% of the total employment of U.S. multinationals.¹ These shares were actually slightly higher than they were in 1977.²

Within manufacturing, U.S. parent operations accounted for 78% of the total assets, 70% of the total sales, and 70% of the

¹Raymond Mataloni, Jr., "U.S. Multinational Companies: Operations in 1988," Survey of Current Business, Vol. 70, No. 6, June 1990, pages 31-44.

²And despite tens of thousands of speeches by American corporate leaders on the globalization of American business, most large American companies do not have any foreigners on their boards of directors. According to a recent survey of directors by Korn Ferry cited in The Economist, the proportion of the top 1000 firms with a non-American on the board has declined during the past few years from a peak of 17% in 1982 to only 12% in 1990.

total employment of U.S. multinationals in 1988. And the data reveal that parent operations provided higher value-added jobs than affiliate operations. Assets per employee in the manufacturing parent operations were about 20% higher than in affiliate operations in developed countries and almost 200% higher than in affiliate operations in the developing countries. Similarly, compensation per employee in parent operations was about 17% higher than in affiliate operations in developed countries and about 360% higher than in affiliate operations in the developing countries. Although the available data do not show a breakdown of R&D spending by parent and affiliate operations, it is reasonable to expect that the lion's share of R&D by multinationals continues to be done at the parent's location. Given that R&D is a primary source of firm-specific intangible assets and that these assets are hard to manage, most R&D is likely to occur close to home, within the purview of senior management.

Numbers such as these indicate that despite early globalization on the part of U.S. multinationals, a disproportionate share of their activity, especially their high-wage, high value-added activity, remains in the U.S. The available evidence suggests that at least at the aggregate level, U.S. multinational companies remain "us" in significant ways.

But what about the foreign multinationals that have established affiliate operations in the U.S.? Are they also us? There is no simple answer to this question. In some industries, such as consumer electronics, especially televisions, U.S. national competitiveness at this point depends almost entirely on foreign affiliates in the U.S. In other industries, such as computers, national competitiveness depends almost entirely on domestically-owned and operated firms. To answer the question "Who Is Us," and to determine whether policy should ever distinguish between domestic and foreign firms, it is useful to consider some basic propositions about possible differences between domestic firms and foreign firms.

Proposition 1. "They are Becoming Like Us, but They Have a Long Way to Go."

There is a growing body of evidence indicating that the domestic operations of foreign affiliates resemble the domestic operations of domestically-based firms in several important respects. For example, in a recent study, Graham and Krugman find that on average foreign affiliates are virtually indistinguishable from domestic firms in terms of value-added per worker, compensation per worker, and R&D spending per worker.²

²Edward M. Graham and Paul R. Krugman, Foreign Direct Investment in the United States, (Washington, D.C.: Institute for International Economics, 1989).

The only significant behavioral difference they find is that the affiliates of foreign firms have an apparent tendency to import significantly more than U.S. firms--almost two and one half times as much.⁴ Because many foreign affiliates were established recently--especially in the 1977-81 period when foreign direct investment in the U.S. grew rapidly, it is quite likely that this tendency to import will decline over time, as affiliates build up local networks within the U.S. This has certainly been the pattern of behavior for the affiliates of U.S. companies abroad.

Of course, the fact that foreign affiliates on average may look increasingly like domestic companies does not mean that there are not significant differences among the affiliates. At one extreme, there are clearly foreign affiliates that are little more than assembly operations for foreign products. As an example, the Ricoh copier operation in California is an assembly plant with very low domestic content. On this grounds, the European Community acted to restrict imports from this plant,

⁴Similar conclusions were found in a recent survey of domestic and foreign firms. The researchers found that foreign firms paid approximately the same wages as domestic firms and had approximately the same occupational structure to their workforce. However, foreign firms imported a higher proportion of their inputs from abroad, while domestic firms exported relatively more of their product. See Norman Glickman, Amy Glasmeier, Geoffrey Bannister, and William Luker, "Foreign Investment, Industrial Linkages, and Regional Development," Working Paper Series, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin, 1989.

arguing that the products in question were Japanese, not American in origin, and were being used by the Japanese producer to get around a European import quota.

At the other end of the spectrum from the Ricoh operation are the extensive American operations of Honda and Sony. Honda, for example, sells more cars in the U.S. than in Japan, and has set up largely independent design, production, and sales facilities in North America. The local content of the automobiles it produces in the U.S. is fast approaching the local content of automobiles produced by Chrysler.

Even though on average foreign affiliates are strikingly similar to domestic firms, they still account for a relatively small fraction of total economic activity within the U.S. Foreign affiliates accounted for only 4.3% of all U.S.-business gross product in 1987, up from 2.3% in 1977. The comparable figure for manufacturing was 10.5% in 1987, up from 5.0% in 1977.³ In light of these figures, the proposition that foreign firms are as important to national competitiveness as domestic firms is more a prediction of the future than a reflection of the present. In most areas--trade, output, employment, R&D spending, etc.--domestic firms still dominate domestic economic activity.

³Jeffrey H. Lowe, "Gross Product of U.S. Affiliates of Foreign Companies, 1977-87," Survey of Current Business, Vol. 70, No. 6, June 1990, pages 45- 53.

For the foreseeable future, the fate of the U.S. economy is tied to the fate of U.S.-owned businesses.

Proposition 2. "Where They are Most Like Us, Our Policies Have Encouraged Them to Be So."

In certain sectors of the economy, especially chemicals, consumer electronics, and automobiles, foreign-owned firms represent a significant share of domestic economic activity.⁴ A similar trend appears to be emerging in the semiconductor industry.

Why have foreign firms established such substantial operations in the U.S. in these industries? Primarily to assure access to the U.S. market when such access via exports has been blocked by trade barriers or is likely to be threatened by such barriers in the future. Surveys regularly show that the primary

⁴Foreign interests now control roughly one-half of the U.S. consumer electronics industry and one-third of the U.S. chemical industry. For a detailed study of their role in the automobile industry, see Robert Z. Lawrence, "Japanese-Affiliated Automakers in the United States: An Appraisal." Paper presented at the U.S.-Japan Consultative Group, Institute for International Economics, Tokyo, November, 1989.

⁵In the case of chemicals, the motivation for foreign direct investment is not trade barriers, but regulatory barriers, especially in the pharmaceutical area.

The argument that trade barriers are an important determinant of foreign direct investment does not mean that such barriers are sufficient to explain such investment. In order for such investment to occur, foreign firms must have the ability to compete with domestic firms even if they are forced to incur higher costs as a result of such barriers. The correct argument is that trade barriers may be necessary to explain foreign direct

reason cited by both American and foreign multinationals for establishing foreign operations is to assure access to foreign markets.⁶ Explicit or implicit local content rules are regularly used by countries around the world, as are a variety of tax breaks and other preferential arrangements, to attract global companies. The U.S. federal government uses none of these approaches, but its restrictive trade policies have unwittingly served the same purpose.

The fact is that most governments--including many state governments in the U.S.--regularly negotiate with global companies to undertake production in their jurisdictions. And although the U.S. has no explicit federal policies for attracting foreign investment, it does so through the back door by the threat or actuality of trade protection.

As an illustration, Honda's extensive operations in the U.S., were largely motivated as a response to U.S. trade policy. Honda's expansion in the U.S. had to be ambitious because it stood the most to lose among Japanese automakers from the restrictions on Japanese auto exports to the U.S. between 1981 and 1985. Because Honda's share of the Japanese market had been

investment in some cases, since in the absence of such barriers, the foreign firm would choose to supply the domestic market by exports, not by domestic production.

⁶Citation to Thomsen and Nicolaides manuscript.

held in check by Toyota and Nissan, the U.S. was Honda's largest and fastest growing overseas market, and its share of the auto export quota to this market was small. Honda responded rapidly to the VERs to become the first Japanese automaker to produce cars in the U.S., and by 1985, it was already the fourth largest automaker in the U.S., having exceeded the production of American Motors.⁹

For both the U.S. and other governments, desired foreign production is not just "screwdriver assembly production" of the Ricoh variety to avoid trade barriers, but extensive production facilities like those of Honda. What governments want is enough of the value-chain of a firm's production process to guarantee high wage jobs and local technological spillovers from the firm's operations. As an illustration of what's at stake, one need only look at the recent "clarification" of the rules of origin in the European Community's anti-dumping law. In February 1989, the Commission announced a rule of origin for integrated circuits, which specified the country where the "process of diffusion" takes place as the determinant of origin.¹⁰ This decision was

⁹Dennis J. Encarnation, "Cross-Investment: A Second Front of Economic Rivalry," in Thomas McCraw, editor, The U.S. Versus Japan (Boston: Harvard University Press, 1988).

¹⁰Note that this clarification of Europe's anti-dumping law has recently been found by a GATT panel to violate GATT's non-discrimination principle. The Europeans have postponed a response until the termination of the Uruguay Round Talks. In

widely interpreted as a signal that the most significant technological process of manufacturing should be located in the EC and set in train a number of investment decisions by Japanese and American firms to establish or expand semiconductor fabrication facilities in Europe. As the chairman of Intel says, "You can't pick up a piece of paper that says why Intel has got to manufacture in Europe. The rules don't exist. But customer decisions are driving important decisions right now."¹¹

And you can't pick up a piece of paper indicating that Japanese automobile firms have to have substantial operations in the U.S. to serve the U.S. market, but continued trade friction on automobiles and auto parts clearly sends a message to the Japanese producers that over time the safest strategy for access to the U.S. market is the location of a substantial share of their value-chain in the U.S. They have also received the same message more directly and clearly from the European Community.¹²

the meantime, even if the law itself violates GATT, it continues to influence the location decisions of major multinational companies.

¹¹Quotation taken from Sylvia Ostry, Governments and Corporations in a Shrinking World, page 49 (New York: Council on Foreign Relations, 1990). The European Community in fact has no explicit restrictions on foreign direct investment with the exception of broadcasting and public procurement.

¹²Indeed, as a pre-emptive strategy in Europe, Japanese multinational automobile companies and other companies are doing a variety of things not explicitly required by European law, including increasing local content, transferring R&D to affiliate

The obvious links between trade barriers and foreign direct investment suggest another conclusion. In evaluating the costs and benefits of VRS and other import-restricting measures on national economic welfare, the effects of such measures on foreign direct investment and associated production, employment, and technological benefits should be included. The evidence from a variety of industries and countries indicates that such measures almost certainly increase prices and reduce competition in the domestic economy in the short run. But if such measures touch off a significant flow of foreign direct investment--as they have done in the consumer electronics and auto industries, and as they are now doing in the semiconductor industry--then the long-run effects may be quite different.¹¹ Indeed, competition

operations in Europe and diversifying their production locations in Europe. As Dr. Toyoda, chairman of Toyota Motors notes, "Japanese companies can help address the complaints by distributing their investment throughout the Community and procuring parts from other European companies." (Quoted in Thomsen and Nicolaides). Ironically, the Europeans may decide that even substantial European operations by Japanese companies may not exempt them from protectionist measures in the automobile industry.

¹¹Several studies of how foreign firms respond to U.S. trade barriers in oligopolistic industries indicate that the short-run response is likely to be an increase in price but the long-run response is likely to involve improvements in product quality and foreign direct investment in the U.S. For a discussion of these findings, see Kala Krishna, "Export Restraints with Imperfect Competition: A Selective Survey," Harvard Institute of Economic Research, Discussion Paper Series, #1460, October 1989.

may increase, prices may fall, and the national economy may benefit from additional production, employment and local technological spillovers supported by foreign investors.

It is ironic that in current trade policy debates, the same economists who lament over the domestic costs of trade restrictions are enthusiastic in their support of the benefits which foreign investors bring to the national economy, without ever noting that often the costs and benefits are the result of the same restrictions.

Nations have been using both restrictive and preferential policies to control foreign investment for a long time. Indeed, much of the globalization of American companies into Europe and many developing nations was the product of such policies. The heads of many American global companies argue correctly that they have globalized because they have had to or because they have been offered more attractive terms for their operations by foreign governments than by the domestic government.

In the long run, rules to regulate exactly when and how nations can either restrict or encourage foreign direct investment are needed. Unilateral efforts by nations to control such investment may in principle enhance national economic welfare, but often at the expense of the economic welfare of other countries. Without multilateral disciplines on unilateral

efforts, the world finds itself in a classic prisoners' dilemma--each nation is tempted to act on its own, but if everyone does, the danger is that everyone will be worse off.

At the very least, if all countries continue to compete for where global companies allocate production, R&D and good jobs, such competition should be disciplined by a framework that discourages zero-sum behavior to the greatest possible extent.¹⁴ But in the absence of such a framework, it makes no sense for the U.S. to disarm unilaterally--we must not sacrifice our ability to use trade and other policies to attract foreign investment as long as other nations continue to do so. If we unilaterally disarm in this way, we leave decisions about the future composition of our economy and its trade not to the free market, but to the policy decisions of our economic competitors.

Proposition 3. "They Are Like Us in the Short Run, But the Long-Run Dynamic Effects May be Different."

From a static point of view, a foreign firm operating in the U.S. may look like a domestic firm in traditional performance indicators, such as wages per worker, value-added per worker, R&D per worker or trade per worker. But the long-run implications may be very different.

First, over time, the foreign firm may actually displace or

¹⁴Footnote Reich in the American Prospect.

First, over time, the foreign firm may actually displace or deter the entry or expansion of domestic companies that might normally be expected to locate a greater fraction of their value chain, more and better jobs, more R&D, more linkages with local suppliers, and more local technological spillovers in the U.S.

Second, over time the foreign firm and the domestic firm may have different effects on industry structure in both the domestic and world markets. Suppose, for example, that the foreign firm knocks out one or more domestic competitors, either directly by buying them out or gradually as domestic firms scale back on investment or exit the market in response to the presence of the foreign firm. The final result may be a more oligopolistic market structure in which the firms remaining in the industry exercise significant market power with its attendant economic costs.

The dangers to national economic welfare from relying on a small number of foreign suppliers in an oligopolistic market are nowhere more apparent than in the semiconductor industry¹³. At this point in time the dominant global suppliers of DRAMS, key inputs in all electronic products, are six vertically integrated Japanese companies. These companies still have the bulk of their

¹³Our dependence on a limited number of foreign suppliers of oil also illustrates the point.

operations in Japan where a complex web of business and government practices limits market access by foreign firms, where antitrust regulations are lenient or largely unenforced, and where most R&D is financed and executed in proprietary channels that limit the diffusion of technological knowledge to foreign competitors and users.

Moreover, the Japanese companies have substantial and growing shares in systems products, like computers and sophisticated telecommunications equipment. The markets for such products are also highly oligopolized, offering significant potential for the exercise of market power, and the Japanese companies are clearly focused on increasing their penetration into these markets at the expense of American and European producers.

One way for the Japanese companies to pursue this objective is to control the terms and availability of supplies of semiconductor inputs to American and European computer companies.¹⁶ There is compelling evidence that the Japanese firms used such techniques in 1987 and 1988, when the worldwide market for DRAMs was extremely tight.¹⁷ And there is more recent

¹⁶IBM is the only U.S. computer manufacturer that can survive without access to Japanese semiconductors.

¹⁷During 1987 and 1988, prices of DRAMS were significantly higher in the U.S. than in Japan, and many U.S. companies reported difficulties getting the supplies they needed. There

evidence of similar behavior by many of the same Japanese firms in controlling the terms and availability of advanced display technologies--in which they have a dominant market position--to strengthen further their positions in computers and other systems products. _

None of the practices employed by the Japanese firms to control the prices or deliveries of DRAMs or displays to foreign users are necessarily illegal or unfair--indeed U.S. firms have often engaged in similar practices when they had comparable market power in input industries. But such practices can be detrimental to the long-term interests of the U.S. and the world economy if they result in less competitive market structures in important industries over time. Under these circumstances, U.S. policy to maintain viable domestic producers as a counterweight to Japanese producers may make sense as a kind of anti-cartel insurance.

From this perspective, it may make sense for the U.S. to finance projects, like Sematech, to maintain an "honest" or competitive supply base in a key input, even if such projects are not themselves commercially viable. And it may also make sense for such projects to exclude the foreign suppliers--in this case the Japanese suppliers--which represent the clearest threat to a

were no reports of shortages in Japan.

competitive supply base in the long run.

From this perspective, the use of U.S. trade policy to push for a share of the Japanese semiconductor market for all foreign-owned companies, not just U.S. companies, and to include in that share sales of the affiliates of American companies operating in Japan also makes sense. From the point of view of encouraging a competitive supply structure in the worldwide semiconductor industry, semiconductors produced by Texas Instruments in Japan or by Samsung in Korea are not substitutes for the semiconductors produced by NEC or Fujitsu in the United States. As this example illustrates, sometimes the national interest may be served by supporting the foreign operations of U.S. companies or the operations of a subset of foreign producers.

Proposition 4. "They Are Like Us Here But Not There."

Foreign operations that look like domestic operations in the U.S. economy may be treated differently in their home markets. For example, while it has been necessary to use U.S. trade law to help Motorola, a U.S. company with significant domestic operations, sell in the Japanese market, it would not be necessary to use U.S. trade law to help NEC or any other Japanese company sell in the Japanese market. Non-Japanese firms have trouble selling to Japan, whether their operations are located in Japan or abroad, but Japanese firms do not have trouble selling

to Japan from either their domestic or foreign operations.

Work by Robert Lawrence and Dennis Encarnation indicates that a striking feature of Japanese import trade is the extent to which it is dominated by Japanese multinationals--in 1986, for example, intra-firm trade accounted for 48.5% of U.S. exports to Europe compared to 72% of U.S. exports to Japan.¹⁸ Intra-firm shipments from Japanese subsidiaries abroad to their parent companies dominate Japanese imports--in other words, Japan's import trade, as well as its export trade, is conducted to a distinctively large extent by Japanese multinationals. This is not the case for either the U.S. or Europe.

In addition, because of how distribution channels are organized in Japan, foreign exporters to Japan remain highly dependent on Japanese distributors for the sale of their products in Japan. This means that if foreign goods are directly competitive with domestic products in Japan they will have trouble entering, whereas if imports are complementary with the interests of domestic companies, they will not.¹⁹ In both cases,

¹⁸See Dennis Encarnation, Investing to Trade: American and Japanese Multinationals in the Pacific Basin, unpublished manuscript, Harvard Business School, February, 1990; and Robert, Z. Lawrence, "How Open Is Japan?" paper presented to the Conference on the U.S. and Japan: Trade and Investment, National Bureau of Economic Research, Cambridge, Mass. October 1989.

¹⁹The fact that imports that are competitive with Japanese products have trouble entering Japan while those that are not competitive with Japanese products do not is described by Laura

corporate control over Japan's trade rests in the hands of Japanese companies.

The same is certainly not the case in the U.S. where Japanese firms can easily distribute through their own channels if they wish to, and most big Japanese firms do. Indeed, given significant foreign direct investment in wholesale and retail trade in the U.S. by 1986, foreign affiliates accounted for 75% of total U.S. imports (and nearly 70% of U.S. exports).

The barriers to sales by foreign companies in Japan are another justification for why the U.S. has generally focused its bilateral negotiations with Japan on market-opening for all foreign-owned firms, not just American firms.²⁶ The MOSS talks, the U.S.-Japan Semiconductor Trade Agreement and the U.S.-Japan talks on beef, citrus, and more recently rice imports, have all demanded market access for all foreign companies, including the Japanese affiliates of foreign companies.

Tyson and John Zysman as a "moving band of protection." See Laura D'Andrea Tyson and John Zysman, "The Politics of Productivity: Developmental Strategy and Production Innovation in Japan," in Chalmers Johnson, Laura Tyson and John Zysman, eds., Politics and Productivity: The Real Story of How Japan Works (Cambridge, Ma. Ballinger Press, 1989).

²⁶Northern Telecom has moved many of its manufacturing operations to the U.S. so that it can better win Japanese contracts. The Northern Telecom decision-makers believe that Japanese companies will prefer to make contracts with U.S.-based operations to alleviate trade friction between the U.S. and Japan.

Another reason why foreign operations that look like domestic operations in the U.S. market may nonetheless behave differently both here and abroad is that they are subject to different antitrust and business practices conventions in their home markets. Again, these differences are most dramatic between American practices and Japanese practices, but significant differences also exist between American practices and European practices as well.

In principle, of course, if a foreign affiliate operating in the U.S. market violates U.S. antitrust conventions here, then it is subject to U.S. law. Moreover, U.S. law can also be brought against the anti-competitive behavior of a foreign parent company either at home or in a third market, as long as it can be demonstrated that this behavior has an adverse impact on domestic commerce.¹¹ However, efforts to apply U.S. antitrust law to foreign company actions outside the United States are extremely costly to mount--since the usual evidentiary burden is even greater in cross-border disputes--too lengthy to be meaningful,

¹¹A recent proposed extension of the antitrust laws would allow suits against U.S. subsidiaries of foreign firms found to engage in price-fixing or other anti-competitive practices in their home markets. Under this extension, antitrust lawsuits could be filed against foreign-owned firms for the damage their collusion might cause to American companies in their overseas operations. This is an important extension of U.S. law that should be strongly supported.

especially in markets with short product cycles, and often unsuccessful, since they involve complicated issues of extra-territoriality and since foreign governments often intercede with the U.S. government on behalf of their companies. Usually, there is little a domestic competitor can do if the parent of a foreign affiliate is effectively able to discriminate against the U.S. firm in its home market or to engage in practices that violate U.S. law in a third market, both to the long-term advantage of the foreign operation and to the long-term detriment of the domestic operation.

Differences in national antitrust regulations are only one example of a wide variety of differences in national policy environments that may work to benefit foreign firms in their home markets at the expense of American firms. In the most extreme cases, foreign promotional and protectionist policies act to provide a home market sanctuary for foreign firms. The sanctuary allows the foreign firms to rob American companies of the sales, economies of production, and profits which they could realize if they had fair access to their competitors' home markets. Enriched and strengthened by their control over these markets, the foreign firms can then mount a trade and investment challenge to American companies in the United States.

As long as foreign firms are protected or promoted by their home governments and as long as they are allowed to engage in anti-competitive practices in their home markets, the playing field for domestic and foreign firms remains uneven. Foreign firms may compete like "us" in the relatively open U.S. marketplace, while American firms are simply not able to compete like "them" abroad.

As long as the playing field is uneven, the specific firm advantages which according to economic theory are supposed to underlie foreign direct investment and which are presumed to make such investment a good thing from the host country's point of view may be nothing more than the creation of anti-competitive, predatory practices and protectionist and promotional policies abroad--practices and policies which presumably are a bad thing for both the U.S. and the world trading system.

In a world of global companies and global industries, there is a need for new global rules to regulate corporate and government behavior. The ultimate purpose of such rules should be the harmonization of government and business behavior across national borders to level the playing field for global companies. But while such rules are sorely needed, they will be a long time coming. Even in Europe, where economic unification is proceeding apace, what the Europeans call a common competition policy is

still in its infancy--with binding rulings by the Court of Justice just beginning to appear. And the U.S. and Canada were unable to agree on most competition policy issues in the formation of the U.S.-Canada free trade agreement.

So the relevant policy question, once again, is what the U.S. should do in the meantime, when national policy differences slant the playing field to advantage foreign producers? And a related question is whether foreign firms operating in the U.S. should be treated exactly like domestic firms by U.S. policy makers as long as foreign governments are treating these firms differently in other parts of the global marketplace?

The principle of "national treatment" on which GATT regulation and much of U.S. trade and investment policy is based clearly indicates an affirmative answer to this second question. But in a world of widely varying national treatments, some of which have severely damaged American companies, many U.S. policy-makers have argued for greater use of the reciprocity principle--access to U.S. markets through trade or investment should depend on the access of U.S. firms to foreign markets.

The reciprocity principle is a serious and dangerous departure from normal U.S. policy. It should be invoked sparingly and only under exceptional circumstances. But this does not mean that it should never be invoked at all. When there

is a long history of market access restrictions on U.S. exports and investment, when there is clear evidence of promotional industrial targeting policies that have advantaged foreign producers, and when the industry in question is particularly important to the nation's future growth and technological dynamism, then reciprocity rather than national treatment should be the principle behind U.S. policy. Under such circumstances, there should be no presumption--and certainly no simple rule--that "they are us" for the purposes of U.S. policy.

Proposition 5. "They Are Not Us."

Even foreign operations which are not benefitted by sanctuary home-market conditions and which look exactly like domestic operations in the U.S. economy may not be comparable when it comes to national security considerations. Indeed, this distinction has been recognized by U.S. law in the Exon-Florio amendment which allows the President limited power to block mergers, acquisitions, or takeovers of US companies by foreign interests when such actions are deemed a threat to national security.

What, if anything, should be done to regulate foreign ownership and control of production in industries or products that are critical to the nation's national security, defined narrowly in military terms, not broadly in economic terms? Can

foreign affiliates substitute for domestically-owned operations for such purposes? To answer this question, it is necessary to keep several considerations in mind.

First, in a global economy, the challenge for national defense strategists is to devise policies that use requirements for national ownership and/or local production by foreign suppliers to enhance home country control over suppliers, regardless of their nationality, to stimulate (or at least not block) the proliferation of such suppliers to maintain an honest or competitive supply base, and to avoid condemning the country to mediocre technologies and unnecessarily high costs in the process.²²

Second, the U.S. cannot rely on a wholly-owned U.S. industrial base for military purposes. Such a strategy is simply too expensive and keeps foreign technology out. Many military technologies are dual-use technologies in which U.S. companies no longer have the leading positions or are no longer the low-cost, high-quality producers. In cases in which foreign commercial technology essential to defense has a distinct lead over U.S. technology, the U.S. should actively seek foreign investors and

²²This is the objective of policies as defined by Theodore Moran in "The Globalization of America Defense Industries: What is the Threat? How Can It Be Managed?" Working Paper, September 1989,

encourage them to invest in manufacturing and research facilities within the U.S.

Third, in thinking about the issues of military security and foreign ownership it is necessary to focus not on the extent of dependence on foreign suppliers for military technologies per se but on the concentration of dependence on foreign suppliers--in other words, it is important to focus not on ownership but on control. From this point of view defense-related activities should be subject to more stringent antitrust provisions than non-defense ones, and these criteria should apply to domestically controlled firms as well as to foreign controlled firms. In military technologies, an honest, competitive supply base is especially important.²³

Fourth,²⁴ if an activity deemed vital to the national defense is subject to excessive market control by foreign producers, possible remedies include: 1. compulsory licensing of the capability to provide the good or service to a domestic

²³For more on the significance of an honest supply base see Michael Borrus, "Power, Wealth and Technology: Industrial Decline and American National Security," In Wayne Sandholtz, John Zysman, Michael Borrus, Jay Stowsky and Steven Vogel, eds. The Highest Stakes: Economic Change and International Security (Oxford, England: Oxford University Press, forthcoming.)

²⁴This point is adapted from Edward Graham and Paul Krugman, Foreign Direct Investment in the United States, op. cit., Chapter 5.

producers. (Because many militarily important technologies fall into the dual-use category, compulsory licensing might be required as a precondition for foreign participation in civilian markets as well as in military markets.) and 2. Local content requirements, including provisions that R&D capabilities be maintained in laboratories and plants within the U.S. and that their facilities employ U.S. nationals. The purpose of such requirements is to locate militarily vital activity within the U.S. and to organize it in such a way that it is capable of standing on its own if cut off from its parent.

Finally, a third response to the problem of excessive control of a national defense activity by foreign producers would be U.S. policies to promote the entry or deter the exit of U.S. suppliers. For example, if a U.S. supplier's position is weakened by market forces, the government might actively intervene to help negotiate mergers with other U.S. companies, to provide refinancing or to offer other forms of financial support. Alternatively, the government might use financial assistance to encourage entry of a new U.S. supplier in a militarily critical technology.

As all of these propositions indicate, when defense goods and technologies are involved, the assumption that foreign firms are "us" must be subject to careful scrutiny. And sometimes

policies may be required to make them more like us or to protect or promote domestically-owned competitors.

III. Conclusions

Foreign direct investment issues are high on the trade policy agendas of the major industrial nations and will probably become even more important throughout the 1990s. These issues have become increasingly salient in trade policy discussions in part because ever larger shares of world trade are driven by the locational and investment decisions of multinational companies, and in part because such decisions are often driven by the actual or threatened use of national trade policies.

Economists usually take a sanguine view of foreign direct investment, noting that in order for foreign firms to displace domestic firms they must have firm-specific assets, such as better technologies and better managerial practices, which will make the domestic economy more productive and competitive in the long run. On the other hand, the very existence of multinationals in an industry is prima facie evidence of market imperfections--indeed, this is particularly true when foreign-based multinationals have sufficient advantages that they can continue to compete successfully in spite of the imposition of performance requirements which presumably increase their costs.

Moreover, to muddy the theoretical waters even more, the firm-specific assets of foreign firms may be the result of protectionist and promotional policies abroad or the result of anti-competitive, predatory practices abroad, both of which erode the ability of domestic firms to maintain or increase their own specific assets over time. Even for a free-trader, the existence of such policies and practices threatens the liberal trading regime by triggering pressures for countervailing measures at home. Nor in the presence of such policies and practices can one automatically assume that national economic welfare is best served by a free-trade and open-investment policy.

As corporations and technologies become increasingly borderless, so must the rules for government and business behavior. In such a world, the principle of national treatment does not go far enough. Supranational rules are required to insure greater consistency in behavior across national borders, especially in global industries in which a few key players exercise substantial market power. The evolving competition policy of the European Community and its enforcement through the Community's Court of Justice provide a useful model of what is required.

Unfortunately, the development of such supranational rules and institutions will be a long time coming. Economic

nationalism is alive and well, although it is increasingly ill-suited to the borderless world economy in some key industries. In the meantime, the challenge for U.S. policy is to take actions that serve the national interest in ways that do not impede and may even accelerate the development of new multilateral arrangements.

Representative HAMILTON. Thank you very much. We will begin with questions from Congressman Scheuer.

Representative SCHEUER. Thank you, Mr. Chairman, and thanks to the panel for a most interesting exposition of views.

Would you please tick off your recommendations for action that you think the Congress ought to take to enhance our international competitiveness. Just tick them off; one, two, three, four, and five.

Almost all of you have touched on the question of the antitrust legislation. Of course, that was passed a century ago, in the last decade of the 19th century; we are now in the last decade of the 20th century. The question was, were we going to let Standard Oil and the Rockefellers gobble up every oil company and gasoline station in sight or were we going to protect the little guy?

Today, there may be a whole other set of issues which do not include how you protect the little guy. It may not be in our national interest to try to figure out how we maintain an automobile industry with four players who are competing nationally; rather it may be to figure out how we can maintain perhaps one or two American automobile companies who are capable of competing in global competition.

I would like to ask any of you, do you think that in terms of the realities of today's competition we can survive in a global market with the enormous investments that are required? I suppose when the Germans and the Japanese and the Dutch and the French all went their separate ways in producing an automobile that can go roughly 80 miles per gallon in the city and 100 miles per gallon in the country—the Japanese apparently have one that goes 120 miles per gallon—they invested billions and billions and billions of dollars in that effort.

The economics drove them to do it; they pay approximately four times the price for gasoline that we do. People around the world perceive gas as being something very special, very scarce, and very valuable. They are willing to pay for the kind of technology that gives them a machine that will get them four times farther on a liter or a gallon of gas. Because of the way we price gas, there is no particular incentive for people to spend another \$1,000 to get a car that is energy efficient.

Therefore, there is no incentive for the automobile companies to spend \$5, \$10 billion, or whatever it takes to produce such a fuel efficient car. In terms of preserving a major player in the automobile industry, or in terms of producing a major player in HDTV, should we encourage and liberate our domestic big hitters to cooperate with each other in order to produce a product that is designed for the global market, distributed in the global market, and advertised in the global market?

Mr. DINNEEN. Congressman Scheuer, would you like me to comment on that?

Representative SCHEUER. Please do.

Mr. DINNEEN. Let me talk just about the antitrust. Let me say at this moment, as the chairman asked me, I am speaking for myself and not for the academy.

I think the changes that have been made in the antitrust laws which permitted research consortia have been very favorable. I was one of the founding members of the Microelectronics & Computer

Technology Corp. (MCC) consortium. I have been very familiar with Sematech. I think those are good things.

They have not been as successful as we hoped, and that is partly because industry has not yet fully supported them. But they have made a big difference. Within the automobile companies, as you have indicated, there are now consortia looking at various aspects of what we call precompetitive research.

Representative SCHEUER. Can they act as consortia in anything beyond research? We have found that the capital investments necessary to get into HDTV, to get into a truly fuel-efficient car on the Japanese-German-French-Dutch model, are beyond the capacity of our corporations to meet. Admittedly, the Japanese save 18 or 19 percent of per capita GNP. We have about a fourth of that, 4 or 5 percent. But this is a fact of life.

It is very difficult to aggregate capital in this country. We cannot seem to get ourselves to save.

Mr. DINNEEN. My own view is that we do not need to go that far, we do not need to go to the point where we—

Representative SCHEUER. And it would not be in the national interest?

Mr. DINNEEN. It would not be in the national interest. We can encourage more consortia in research and more consortia in process, the manufacturing process and the production process.

Representative SCHEUER. Is that permitted now under the law?

Mr. DINNEEN. Well, it is hazy. As long as we maintain the competitive nature of our private enterprise. But one other point I want to make, and that was a point I made in my prepared statement.

I think it is necessary for the Government to enter into negotiations with other countries on antitrust rules so that in fact our companies are not looking at companies in other nations which are not bound by the same rules we are. I guess that gets to the point that both the other speakers made.

Representative SCHEUER. Mr. Dinneen, let me interject here. We found tremendous difficulties in gaining access to the Japanese market. They do their business differently than we do in a lot of respects.

There are cultural, there are historic, there are whole congeries of impediments to our entry into the Japanese market. Their retailing system is very, very different. We have found it almost impossible to negotiate a way through that thick hedge of restrictions. No sooner do we complete 2 or 3 years of negotiations to get rid of them, and we find a whole new thicket of trade barriers has grown.

Those historic limitations, their historic cultural baggage, of inhibiting access to their market, has been really quite difficult, if not truly impossible, for us to cope with. Now you are going even further and saying that we should tell them, the Japanese Government and MITI—the Ministry of International Trade and Industry—that they cannot relate to the corporations in the very close, intimate, sort of one for all and all for one fashion. This group concept that is rooted in Japanese history and culture has to go? They have to entirely change the way their government deals with individual corporations so that they are on an arm's-length basis, the way our government is?

Mr. DINNEEN. I was not suggesting that.

Representative SCHEUER. But if you said that the Japanese corporations have to compete with our corporations on the basis that they compete with no interrelationship between the government and individual corporations. So there is no consensus that the government is going to get behind the robotics industry, for instance, as they did in Japan—they arranged the financing over a 10-year period and turned Yamaha—I forget the name of the company—loose. You are going to ask the Japanese society to revolutionize the way that it is structured? I just wonder whether that is a practical possibility?

Mr. DINNEEN. I do not think it is practical to try to change that society. I know a fair amount about the Japanese, having worked with them over the years, both in government and in industry.

Representative SCHEUER. Tell me, what does your experience tell us on the degree to which we can tell the Japanese that they have to live by our antitrust laws?

Mr. DINNEEN. I was not suggesting that and I do not think we should. What I was suggesting is that when we look at our antitrust laws and we try to move them a little bit further than we have so that we can do some precompetitive process, and that in doing that we also try to understand better what our companies are dealing with and what are the antitrust laws. These can just be matters in negotiation. They will take a long time, as I indicated.

In fact, through our structural initiatives and programs, we made some changes and many of our companies have made very powerful alliances now with Japanese companies. Perhaps some of my other panel members would like to comment.

Mr. PETERSON. I would like to reinforce Mr. Dinneen's comments. I am certainly not a technology expert, but from viewing the economic structure of industries on a somewhat global basis, I think what we need is more competition, not less, and that our policy emphasis ought to be directed toward assuring that other nations pursue competitive policies similar to our own.

The United States not only can compete, but it is competing, and it is competing across a very broad industry spectrum. I would go back to macroeconomics but not dwell on it. Since the U.S. exchange rate turned around in 1985—we have approximately 20 different U.S. industries, according to our SIC system—every single one of those industries has increased their export-to-sales ratios by significant percentages over the 1986 to 1989 period.

U.S. firms are still the leaders in terms of the largest firms in a broad complex of industries. In the automobile industry, the two largest firms in the world are still U.S. firms. General Motors still produces twice as much as the largest Japanese automobile manufacturer. Four of the five largest computer manufacturers are in the United States. The three largest aerospace manufacturers are in the United States.

We have not lost technological leadership across the board, and I think it would be a mistake to allow U.S. economic policy to be driven heavily by the experience of a single industry which is always the case study, semiconductors and the electronic components industry.

Representative SCHEUER. Or the consumer electronics industry, or HDTV.

Mr. PETERSON. Again, as a nontechnologist, I am really getting out of my element here. I wonder if we really know what the externalities of those industries are and how they are affected. We still have four of the five largest computer companies in the world, despite the fact that we are supposedly losing ground in semiconductors on which that industry is based.

We have the CEO of one of the Nation's most progressive computer manufacturers, Cypress, saying the sky is not falling in. The balance is shifting to small companies like our own. I think where the real difference is is that the United States, because of its cost of capital structure, because of its competitive structure, has not committed the resources to research and development, has not committed the resources to capital expenditures, that are required to get us progressively ahead of the competition in these areas.

We have been holding our own in some significant measure. Our trade balances in the high technology sector have turned around dramatically in the last 5 years with every country and region except with Japan.

Representative SCHEUER. Well, that "except" is a big exception. Let me just pursue that.

You said our government policies in terms of assistance in research and assistance in the aggregation of capital have not kept up with the need. Is that more or less what you said?

Mr. PETERSON. More or less. I think there are other items which seem to me to be more controlling.

Representative SCHEUER. Certainly the aggregation of capital is an enormous problem for us vis-a-vis the Japanese.

Mr. PETERSON. Absolutely.

Representative SCHEUER. And certainly the ability to research a globally competitive fuel-efficient car is something we have not been able to afford. We have not been able to afford the research to get into the HDTV business, which is going to be an enormous business in the future.

What is your answer to that? Are you going to bring us into a new era of government-corporate relations? How do we get into global competition on HDTV? How do we get into global competition with a car that meets the needs of the future?

And you must know—Ms. Tyson, surely you must know—that in the State of California more than half of all cars sold are foreign cars, and the overwhelming preponderance of them are Japanese cars. Is that correct?

Ms. TYSON. Absolutely true. I have two. [Laughter.]

Representative SCHEUER. OK. You could not run for public office out there.

Ms. TYSON. It is just honesty, disclosure.

Representative SCHEUER. OK. I respect that.

Let us just address those two questions. How do we aggregate capital for R&D, which we have not been able to do, either in cars or in HDTV, for example? I do not know if we have been able to do it with smart computers. Maybe IBM can. And then how do we aggregate the capital for the production of HDTV, or the production of that new global automobile that we are far from producing?

I say the background is this. The Japanese penetration of our automobile market nationally is going up inexorably by a percentage point or two every year. Where does that end? In California, they are way over the 50 percent mark. But in the rest of the country too, every year, the Japanese penetration of the automobile market goes up inexorably, and I am not saying that is necessarily bad. Maybe we should let the Japanese supply us with our cars. Maybe there is something else we should have our industry be concentrating on. But that is going to be a big lump for the American public to swallow.

What is the role of government in assisting, supporting, encouraging, facilitating—use any verb you want—R&D and actual production in these two fields as well as other fields?

Mr. PETERSON. Well, as a former chief economist for a food and tobacco company, accept my comments in the qualified way in which they are offered.

I think U.S. support for R&D ought to be generic, as I understand it, across all industries. It ought to be oriented toward increasing research and development generally. I do not buy the story that there is a single industry, like high definition television or semiconductors or a piece of communications, critical to our future. I think we have to look collectively at all the industries.

I would defer to Mr. Dinneen in terms of the benefits of what he calls precompetitive R&D. I would defer to Michael Porter who, after a study of competitiveness in 100 industries globally, says that the major source of competitiveness of an industry in a global sense derives from the degree and intensity of the competition within the domestic industry in the country which is the generator of the capital or the generator of the competitiveness.

Here we have a really special problem when it deals with Japan because of the structure of the keiretsu, where you have large agglomerations or groups which probably ought to be treated as a single firm in terms of their competitive implications. Unless there is some restructuring of that, we might want to look at them as single economic entities.

But my strong preference is to keep the assistance to U.S. industry more in generic terms through expanded R&D credits, through macroeconomic policies that lower the cost of capital. I do not think we lack R&D resources.

Representative SCHEUER. To lower the cost of capital for R&D?

Mr. PETERSON. For R&D specifically, but I do not think competition derives exclusively from R&D. I understand there is a distinction people make between science-based and technology-based industries, and that a lot of the incremental advances in technology-based industries are really at the firm level. They consist of small things that small firms like Cypress Computer can do to take a leading position in growth in global markets. And incremental improvements like that can be and are being made out there in America in those other 19 or 20 industries that are improving their position.

I do not think we ought to narrow our focus to particular products or to particular high-tech industries.

Representative SCHEUER. Ms. Tyson, before I yield back to the chairman, did you have something that you wanted to say?

Ms. TYSON. Well, there are a number of things that came up, but let me just focus on the last set of issues. I want to try to draw a distinction between Mr. Peterson and myself.

First of all, I do not agree that the United States does not have a competitiveness problem. The improvement in the U.S. trade balance is partly the result of the exchange rate changes, which I think were important. It is partly the result of the fact that the rest of the world is growing more quickly than we are, and will, indeed, for the foreseeable future. In the next decade, Japan and Europe are going to outgrow us.

In addition, we have been able to sustain this export boom without significant increases in real incomes for most of our workers. We cannot sustain high income growth and trade balance. We can barely sustain trade improvement and stagnant income growth.

Productivity trends are wrong for us at this point. German and Japanese manufacturing productivity is growing faster than ours. They have already caught up to us. In the 1990's, they are going to outdo us. They caught up and the catchup is over; if the trends do not change, we fall behind.

The Japanese have almost surpassed us in commercial R&D spending. We spend about \$69 billion, they are already spending about \$60 billion. They are outinvesting us in absolute terms already. There is no sign that the United States is changing, nor is there a sign that Japan and Europe are slowing down, indeed, I think Europe will pick up.

Representative SCHEUER. Just a footnote to what you are saying, that they have almost caught up with us in R&D. This is a country that has significantly less than half of our population.

Ms. TYSON. Right. Also, if you look at the U.S. position in critical technologies—critical commercial technologies, critical military technologies, critical electronic technologies—vis-a-vis the Japanese and sometimes vis-a-vis some of the Europeans, the United States is no longer in such a strong position.

I do not think the U.S. computer industry, frankly, is going to hold on in the 1990's. I think the cross we saw in DRAMS in the 1980's was a precursor of the cross we will see in computers in the 1990's. The Japanese will take the dominant share of the world market away from the U.S. companies.

After all, there is only one U.S. company that can survive without Japanese components, and that is IBM. Many American computer companies have 85 to 90 percent of the value of their output in the form of Japanese componentry, and the Japanese suppliers of the components are making competitive computer equipment. I just do not buy the notion that we do not have a problem.

Now, on the issue of what to do about it. I hear a lot about generic technology support. I think we should be spending more on precompetitive technology. But the truth is the United States has been a pretty good generator of technological information, particularly through the mid-1980's. The problem was not that we did not generate good technical information. We generated it but the rest of the world used it a lot better than we did.

If we just spend more on precompetitive technology, without targeting anything, without examining industry structure, if we just put in more resources and try to let the market decide, I do not

believe the results will lead to better jobs and higher profits in the United States. I am really concerned about that.

On the issue of competition: We had plenty of competition in the merchant semiconductor industry in the United States. It was one of the most competitive industries we had, and it suffered. You could say that DRAMS or semiconductors are used too often as an example. Watch supercomputers and computers in this coming decade and you will see the same story. The semiconductor case is a precursor. It is the first story. It is not the last story; it is not the only story. But let me illustrate the kinds of problems I think it poses for the United States.

We talk about the need to reduce the cost of capital. That may not be enough. For example, there are a number of cases of innovative companies coming up with a design for, let's say, a display technology or a design for a new VCR technology.

However, having come up with the design they cannot get funding to produce the prototype, or to begin a manufacturing run long enough to learn to make an even better product. The funding is not available at any price because it is believed that U.S. firms have lost this industry to the foreign competition, that we are not in this game anymore.

I find this a very disturbing trend because if the Japanese had that attitude when we were ahead in DRAMS, or if the South Koreans had that attitude when we were ahead in color televisions, they would not be where they are today. They had to support a particular set of technologies in order to achieve some market position. If we are unwilling to do that, we cannot compete in these critical technologies.

There is a second question which is related to today's discussion, but which has not really been addressed. Suppose we do not get these technologies? Suppose all the displays in the world are produced by the Japanese?

Does that matter, provided the Japanese are competitive—there are a number of display producers—and provided they are producing displays here in significant numbers using American engineers, American workers, and supporting the American research and development base? Is that enough?

We may not be able to get the display technology or the HDTV technology back. Maybe it is too late, or maybe it would be too costly to do, even if we could. The second best solution might be to get Sony or some other foreign-owned company involved but require them to be part of a research consortium doing their research here.

In the HDTV debate, something very interesting happened. Sony wanted to make a submission through DARPA for HDTV support. The Sony headquarters chief here was asked, will you spend the money in the United States? He said they would set up a research and development facility to spend the research money in the United States. However, there was disagreement in the press between the headquarters of Sony in Tokyo and the headquarters of Sony in the United States about this—where the money would be spent.

I suggest that in certain technologies our public policy should work with foreign firms who have a significant presence. We can

encourage foreign firms to have a more significant presence here by the research and development policy we pursue. That might be the real issue for us.

Representative SCHEUER. Thank you very much, Ms. Tyson. Thank you very much, Mr. Chairman.

Representative HAMILTON. Thank you, Congressman Scheuer.

Mr. DINNEEN. I just want to pick up a point that struck me. I am not even sure it is relevant to the hearing today in some respects. But you say there is a growing convergence in technical capabilities of industrialized nations. That kind of caught my eye.

Does that mean we can no longer expect to be technologically superior? We have always prided ourselves on being ahead of the pack. We have a convergence coming here? What does that mean? We are all together?

Mr. DINNEEN. That is a very good question. I think that we should continue to work for technological superiority, but I think we have to recognize that there is a convergence.

Representative HAMILTON. Are we technologically superior today?

Mr. DINNEEN. Well, to answer that question we have to look at a whole variety of technologies.

Representative HAMILTON. Sum it up for me in a sentence.

Mr. DINNEEN. I would say we are one of the technological superpowers.

Representative HAMILTON. Is Japan ahead of us or behind us?

Mr. DINNEEN. Japan is ahead of us in certain areas, and we are ahead of them in certain areas. The same thing was true of the Soviet Union in the military.

Representative HAMILTON. Who would you identify as the technological superpowers?

Mr. DINNEEN. Well, the United States, Japan, and then I would say if the Europeans come together, they would be one—Germany, France, and so on, if they get a unified European Community.

Representative HAMILTON. I was interested in your report. NAE argues forcefully for a stronger government role. More specifically, a reorientation of U.S. public policies to reflect the new global realities of technical convergence and interdependence.

You want the United States to develop the necessary human, financial, physical, regulatory, institutional infrastructures. Highest priority must be to make the United States an attractive and advantageous place for individuals and companies, regardless of national origin, to conduct the full complement of technical activities.

You seem to be arguing for a very, very active role by government in making the United States competitive. Mr. Peterson says it is the macroeconomic policies that we have to get straight. Is there a big gap between you two here? How much government do you want? And precisely what do you want us to do?

Mr. DINNEEN. Could I make a general comment first? As I said in my testimony, I am an engineer. I am not an economist. I have been concerned most of my life with the development of military technology, both at Lincoln Laboratory and with the Government.

One of the reasons I went to industry was I was concerned with the productivity of our nation, the fact that we seem to be, as Congressman Scheuer has pointed out, losing out in a number of areas,

and that we were not producing the right kinds of equipment and getting it into the field.

To answer your question another way about technological superiority, if you look at the advanced technology, we are the technological superpower. That is why our universities are full of foreign students. We have 50 percent of the foreign engineering graduate students because they are coming here because we are great in that.

We have not been able to turn that into competitive product worldwide. I think in order to change that situation, which has been deteriorating over a long period of time, we need not just macroeconomic policies, which I think we need—we do need to decrease the cost of capital, we do need to worry about encouraging long-term research and development—but we also need to gather data on what is happening in other countries, we need to get this kind of informed debate.

Again, speaking personally, I do not recommend, in your words, a very active role for the Government. I do not think the Government should decide that we are going to be first in HDTV and put a lot of money into the production of that, or that we should build the first hydrogen car, or whatever.

Representative HAMILTON. Your statement says the NAE report argues forcefully for a stronger government role.

Mr. DINNEEN. That is right. I was just referring to a very, very active comment. I am suggesting a forceful government role in worrying about the competitiveness—now I am speaking for myself—the competitiveness of our citizens. What I am concerned about is getting a better standard of living for all our citizens.

Representative HAMILTON. How do we do it?

Mr. DINNEEN. We have to do it by making this nation competitive, not only our own industry, but making it attractive for companies from other nations to come here and build their production plants here and do their R&D here.

Representative HAMILTON. All right. I got that. But what government policies do you want to achieve that?

Mr. DINNEEN. One, and maybe most important, is one that the Government is already working on but I think has to work on with even more urgency, and that is improving our educational system, particularly kindergarten through 12th grade.

One of the problems that we have had in this country is in the work force. It is not the graduate engineers. We have to do a better job of improving our education so that people are attracted here, and because in the future our high technology thing.

We should be looking at various options for decreasing the cost of capital or in bidding more capital. Maybe some kind of a tailored capital gains tax. I don't know. I am not an economist.

We should, as I said earlier, look at ways of changing the anti-trust laws so that people can work together, not only on R&D, but on process as well.

Representative HAMILTON. How much government support do you want developing this precompetitive technology? I want you to define that phrase for me. That does not mean anything to me. I do not know what precompetitive technology is. I do not know what

generic technology is. What are we talking about there? How much government support do you want for it, and how do we give it?

Mr. DINNEEN. I am sorry. Let me first try to define the term. I am sorry for the jargon. I try to avoid that.

The technologies we are talking about are the technologies that underlie our industry. For example, advanced materials, basic semiconductor research, perhaps software engineering, things which underlie a number of different products and industries. Generic means they apply to a number of different things.

Representative HAMILTON. And you favor government supporting that kind of effort?

Mr. DINNEEN. There is, as you know, an advanced technology program now in the Department of Commerce. I think it is funded at \$10 million this year. I know there has been some discussion within the Congress of funding it at perhaps \$100 million next year. That would seem to me to be a very good thing to do.

Representative HAMILTON. Who should be allowed to participate in it?

Mr. DINNEEN. Certainly primarily American companies. That is a very difficult question, how you restrict the participation. I assume you are referring to whether or not we allow foreign companies to participate?

Representative HAMILTON. Yes.

Mr. DINNEEN. Obviously, I would think a foreign company by itself would not participate. But suppose there is a consortium to develop this technology, and one of the members of the consortium, with the consent of the other American firms, was foreign. Then I would not want to legislate against that.

Representative HAMILTON. You would not put a requirement in that only American companies could participate?

Mr. DINNEEN. I would not.

Representative HAMILTON. Would you require any kind of conditionality or reciprocity?

Mr. DINNEEN. Oh, yes, I would. Absolutely.

Representative HAMILTON. OK. Of course, these questions really go to all of you. I want to get your ideas on them as well.

Mr. PETERSON, what do you think of all this? Do you want a strong forceful government role in developing precompetitive technologies and generic technologies?

Mr. PETERSON. As I understand the process, yes. I do not think there is any disagreement on that score. I think the Government should devote considerably more resources to these issues.

Representative HAMILTON. Than we are?

Mr. PETERSON. Than we are now doing, as I understand it.

Representative HAMILTON. We are doing it rather modestly?

Mr. PETERSON. That should be augmented with broader policies. I do not think there is a shortage of resources in the United States in the aggregate when you look across all industries, as some others would suggest. As I mentioned earlier, American multinationals are leaders in most industries. In sales they are fairly strong. In profitability they are far more so.

It is the differences in rates of return that American corporations are willing to accept that have prevented them from making the commitments to R&D and capital expenditures that would

enable them to maintain parity with Japanese firms. That difference of cost of capital is basically made in Washington in a very significant way.

Representative HAMILTON. But you support the advanced technology program. You would like to see it expanded. Do you think it should be limited to American companies?

Mr. PETERSON. I really do not feel very qualified to respond to that, but I am inclined to agree with what I heard from Mr. Dinneen.

Representative HAMILTON. That foreign companies ought not to be excluded.

Mr. PETERSON. Prima facie, under certain circumstances. Here again, I think one needs to look at, as Ms. Tyson was suggesting earlier, the structure of the foreign companies or industries that are participating. If they are already global technological leaders in the industry in which one is looking to support the research, one would not necessarily want them participating in a way that will act only to reinforce their global competitive leadership.

Representative HAMILTON. Are we getting away here from the Silicon Valley entrepreneurial model that some economists talk about, that that is the way to get competitive in the world? Let them rip out there, do their own thing, keep the Government out of their way, that is the way to become competitive. You folks are talking a different language here.

Mr. DINNEEN. I think we are. In fact, it is an interesting question because when I was in government, we had a program in the Defense Department dealing with very high speed integrated circuits, funded fairly heavily over a long period of time. At the time that started, people in Silicon Valley said, many of them did not want to participate. They did not want to participate because they said just what you did—the right way to do this is to have the entrepreneurs and let them go. That did not work.

The people that did participate in it were larger than the military companies, who then did not have a market, so unfortunately they did not—

Representative HAMILTON. You like Sematech?

Mr. DINNEEN. Pardon.

Representative HAMILTON. You like Sematech?

Mr. DINNEEN. I like Sematech.

Representative HAMILTON. Some people say Sematech is kind of a rich boys club.

Mr. DINNEEN. To some extent it is.

Representative HAMILTON. Should it be broadened to let some other people in?

Mr. DINNEEN. Meaning smaller U.S. companies?

Representative HAMILTON. Sure.

Mr. DINNEEN. Well, I do not know the answer to that. Obviously, the companies that participate do it on the basis of everybody sharing.

Representative HAMILTON. How many participate?

Mr. DINNEEN. I think it is 20 maybe, 10 to 20.

Representative HAMILTON. Fourteen. I am told 14, and they are mostly big fellows. They are mostly big ones, aren't they? How does the little guy get in there?

Mr. DINNEEN. He cannot at this point.

Representative HAMILTON. He is shut out, isn't he?

Mr. DINNEEN. He is shut out because the deal was—

Representative HAMILTON. So it is a rich boys club, isn't it?

Mr. DINNEEN. I am not sure I would call them rich boys.

Ms. TYSON. I think the notion was they were relatively weak. I would not use the word "rich" here. These were relatively big companies by U.S. standards, but they were not big by the standards of their foreign competitors. At the time Sematech was initiated, these firms were big, but many were also on the brink of disappearing. Their operations in critical technologies were scaled down to such a point that it was perceived to be a threat to certain major areas of the industry. Small firms really cannot be the major suppliers in these areas.

Representative HAMILTON. You like the idea of Sematech?

Ms. TYSON. Yes. I think Sematech—

Representative HAMILTON. How would you change it? Expand it? How would you expand it?

Ms. TYSON. I think that the main problem with Sematech was not who was in and who was not in. The main problem with Sematech was that it was too small an effort too late in the game. I think the problem for the United States in general—

Representative HAMILTON. Is it a waste of money now?

Ms. TYSON. No, but it may be that we need more than we have put in so far. I do not think that Sematech can solve all of the problems of the industry. We have to constantly ask ourselves this national policy question: Is a domestically owned capacity in the semiconductor industry in mass-produced memory parts of the product line important to us?

Representative HAMILTON. You would agree with Mr. Dinneen here that we really have to put a lot more money—we, the Government—into these precompetitive technologies that he has identified?

Ms. TYSON. As I said a few minutes ago, my concern about doing just that is exactly related to another point that Mr. Dinneen made. We generate a lot of good ideas here. Contributing to precompetitive R&D support will allow us to generate more good ideas. The truth is, America's history of failures in industry is not due to a lack of good ideas. Therefore, I am afraid that if we just put more money into generic R&D, we are going to be sorely disappointed with the results.

Representative HAMILTON. How do we get into the business of—I don't know the right word—commercialization of this. Is that a role for the Government as well, to get into spreading the information, diffusing the information that you develop?

Ms. TYSON. Yes. I think there are two things we need to do. We need to be more involved in the diffusion of ideas. Investing in more diffusion efforts could extend knowledge that we already have or help develop new ideas.

Representative HAMILTON. You are using "we" as government?

Ms. TYSON. As government. State governments are doing some of this right now. There is some effort to diffuse new technologies to small- and medium-sized firms already going on. However, it could also be coordinated as a Federal effort. I want to emphasize to this

panel that the United States has to be more serious about this policy. There are a lot of generic technologies out there. Which ones do we actually support?

The United States has to recognize that certain industries, for a variety of reasons, are arguably more important than others and that there are certain critical industries in trouble.

Representative HAMILTON. And the Government has to make that decision?

Ms. TYSON. I do not even think the Government has to make that decision. I have a feeling that the National Academy of Engineers, the National Science Foundation, the Academy of Sciences, Erich Bloch could sit here and tell you which ones.

Representative HAMILTON. Well, should we pass a law and say Erich Bloch can identify which industries to put money into?

Ms. TYSON. No.

Representative SCHEUER. Could we have an American MITI making these decisions?

Ms. TYSON. We could have some kind of cooperative industry-government panel. This is really what DARPA was trying to do in the military sector. They identified the technologies which looked like the most important bets. Using Federal dollars and getting matching funds from the private sector, we can promote spending in this direction.

Representative HAMILTON. Let me see if I understand you correctly. With such an informal arrangement as you have identified, you think there would be kind of a consensus emerging as to where the investment ought to go? Is that it?

Ms. TYSON. I am not talking about investment in particular firms; I'm talking about targeting general areas.

Representative HAMILTON. Why is it other countries beat us so badly in this business of commercialization?

Ms. TYSON. I think there are a variety of issues. I do not want to argue here that there is no weight to the macroeconomic story. If you think about what is going on—

Representative HAMILTON. I was going to get back to that.

Ms. TYSON. We have to think about incentives for our companies. We have put them in a position where the cost of capital is relatively high, and furthermore, their market is not secure. In the previous decade, we gave them an incredible exchange rate disadvantage, we dragged our feet in dealing with foreign market barriers, we did not even believe that such barriers worked to our disadvantage until sometime in the mid-1980's. Our firms were faced with high cost of capital, high risk to investment because of the exchange rate and the market barriers they faced abroad. Frankly, in many circumstances, the perceived return relative to risk was not really enough to go far in commercialization.

Representative HAMILTON. What then do we need to do to make the transition—and I am speaking now, we the Government—what do we need to do to make this transition from the laboratory, from R&D, to commercial applications?

Ms. TYSON. I think we have to do a number of things to improve the climate for American business, and that will encourage them to commercialize new technologies. I will go down my list because I have had a little time to think about it.

I think we should make the R&D tax credit permanent and broad. I think we made a terrible mistake getting rid of the investment tax credit. Furthermore, I think the investment tax credit should be more targeted, should be much more selective in what it encourages.

I think we made a mistake in weakening DARPA—I think we should strengthen it and increase its budget. I think the United States is in a precarious situation right now because——

Representative HAMILTON. Hold on just a minute. DARPA is in the Defense Department, right?

Ms. TYSON. Right.

Representative HAMILTON. Our problem is not there, is it?

Ms. TYSON. No, but let me——

Representative HAMILTON. Our problem is in the civilian sector, right?

Ms. TYSON. Yes, but let me point out to you——

Representative HAMILTON. Why do you strengthen DARPA?

Ms. TYSON. I would strengthen DARPA for the following two reasons. First, if you look at the U.S. economy, our most dramatic success stories are industries in which the Federal Government played a major supporting role at some point early in their development.

Aircraft, we are the No. 1 producers of aircraft in the world. Why? Because that was a defense priority. We are the No. 1 computer producers in the world. Why? Who started the computer industry? DOD procurement. We are the No. 1 agricultural industry in the world. Why? Because we developed it as a result of national policy.

Representative HAMILTON. I am sorry. I have a problem arising. I apologize to you. I have a conflict that has arisen and I have to turn to it immediately. I have all kinds of questions I want to ask this panel because I think it has been a very stimulating panel, and I hope you do not take my questions as being antagonistic. I am really trying to draw you out.

My interest here really is policy. How do we deal with the problems that you very well set out for us? I hope that in the balance of our session you can be as specific as you can. Of course, I am also interested in the question of foreign companies. Sometimes we get the sense around here that foreign companies are just coming here and plucking our high-tech jewels, if you would, in this country, and taking the high technology back to wherever. I would like you to address that question and a variety of others.

Representative SCHEUER. Mr. Chairman.

Representative HAMILTON. Go ahead.

Representative SCHEUER. Ms. Tyson, we got lost. She was giving us a laundry list of industries that have developed and prospered because the Government was there to provide a market, to provide stimulation. Could we just let her finish that laundry list? I think that was instructive.

Representative HAMILTON. Go ahead.

Ms. TYSON. My list is basically aircraft, all the sophisticated electronics and computers and sophisticated componentry. I also argue that our strength in agriculture is also due, in large measure, to public policy.

The danger the U.S. faces as we scale our military effort—assuming we continue to do that, particularly with the budgetary crunch situation—is cutting research spending through the DOD. DOD-sponsored research had some beneficial effects on the economy. That was pretty targeted. It was not general.

Representative HAMILTON. Can I ask you this question? How much of American high technology today involves Federal subsidies?

Ms. TYSON. Do you mean what percentage of their revenues?

Representative HAMILTON. I am just getting some sense of it. How important is government subsidy to American high technology? I guess that is the point.

Ms. TYSON. The problem with asking that question is that it is a very static question. The U.S. position in computers today is a consequence of spending and procurement and standards policies which have been in existence during the entire postwar period. The Japanese would not have a computer industry if they had not had a series of public policies exactly targeted at the notion of having a computer industry. The South Koreans, to take another example, would not have a semiconductor industry if they had not done that.

Our firms have very little in the way of subsidy support from our government. But that does not mean that at another time the existence and growth of an industry was not predicated upon someone's willingness, under the guise of defense, under the guise of national security, to say this technology is really critical. We have to go with this technology.

Representative HAMILTON. You are willing to continue the DARPA. That is, you think the focus from an organizational standpoint now, in the Government, ought to be in DARPA.

Ms. TYSON. I think the following. DARPA has done, by anyone's measure, extremely brilliant work at choosing and promoting technologies which have been of interest to the military and to the civilian sector.

Representative HAMILTON. A lot of people say today that the technology that you need in the military has less and less of a spin-off in the civilian sector. And that indeed, the civilian sector now has a lot of spinoff into the military.

Ms. TYSON. But in fact, DARPA was adjusting its own policies in that respect, exactly reflecting that. The current trend in DARPA over the last several years was to say, what we have to do is identify and support critical dual-use technologies which will be commercial and military. They got into trouble, because of an unwillingness on the part of U.S. policymakers to target a technology if that technology has any commercial interest. There is a feeling that if a technology has commercial interest, we definitely should not target it, because the market will figure it out.

But in precompetitive and early stages of competition in new technologies, what is the market? It is a few players, most of them subsidized and protected by other governments.

Representative HAMILTON. Would you like to comment on this?

Mr. DINNEEN. Yes, I would like to.

Representative HAMILTON. You have had a lot of experience with this.

Mr. DINNEEN. Yes. First of all, on your question about government subsidy and R&D, the research and development test and evaluation budget of the Nation, I think is around \$120 billion, and about half of that—

Representative HAMILTON. \$120 billion?

Mr. DINNEEN. \$120 billion. That is for everything. We are talking about everything from basic research to the case of the development of the Stealth in the case of defense. But \$120 billion for U.S. R&D, \$60 billion of that is government and \$60 billion is industry. I think it may be a little more industry now.

Of that \$60 billion, maybe \$30 or \$40 billion is defense, and the rest is National Institutes of Health and so on, National Science Foundation. So the Government already plays a very large role in the U.S. technological strength.

With respect to the specific question about DARPA, I feel first of all that DARPA has done a very good job. I have been involved with it from its very earliest days. I think you are right, that for a long time defense technology was moving into the commercial sector. Particularly in electronics now, it has been moving the other way. But there are also many defense technologies and space technologies which will move the other way.

I do not think we should give DARPA the role to do this for the commercial. I think it should be separated. I think the people in defense should be concerned about technologies to support our defense. That is their mission. If we are going to worry about other technologies, I think we ought to do it in a different way.

The question of public policy, you asked why did we not commercialize. Some of this is the problem of the private sector. If you talk to them privately, they will tell you that. They had big markets and they simply were not giving the attention to quality that should have been done, and we suffered as a result. In fact, one of the reasons the Japanese came in and took over semiconductors was because their semiconductors were better.

Representative HAMILTON. A lot of this problem is management.

Mr. DINNEEN. A lot of it is management. Now, we are turning that around, and we have not lost. We still are very, very strong in commercialization of technology in areas like biotechnology and so on.

Representative HAMILTON. I am just so sorry. I have to leave. I apologize for that. I want to thank you for your participation. Congressman Scheuer will carry on. It has been a very, very good morning. Excuse me.

Representative SCHEUER [presiding]. Please proceed, Mr. Dinneen.

Mr. DINNEEN. I was just saying that in terms of the quality, first of all, the industries now have recognized it over the last 5 or 10 years and in fact have improved their productivity and their quality dramatically. The Malcolm Baldrige Award, which recognizes that, is having a very, very large impact, both on the companies that win it and on the companies who are competing for it. That is a relatively small thing the Government has done, but a very important thing.

There are other answers to the question of how do we improve this. By looking at the examples of our own companies and making

them available to other people. We are doing studies; in fact, we will be publishing a book this year at the academy on examples of companies that have really done a good job of commercializing technology, and then making that available. So there are some things we can do that are not very costly.

One other point I do want to make, and I am sure Laura Tyson and I are talking about the same thing. When I was talking about further support of the advanced technology program, I was talking about support of things like product and process technology, not specific to a particular product. I would agree that putting more money into basic research at this point, while it may be a good thing to do, is not going to help as much as trying to focus on things which will improve the commercialization.

Representative SCHEUER. Mr. Dinneen, the chairman asked me to ask you a further question concerning Honeywell, with whom you have worked for many years. Honeywell is a member of MCC, Microelectronics and Computer Technology Corp., a Texas-based technology consortium. MCC restricts its membership to U.S.-owned corporations. What is the rationale for MCC's U.S.-only policy, and do you agree with that?

Mr. DINNEEN. I would have to admit that I am not current. That policy may have changed. In fact, I know there was some discussion about permitting some foreign companies into MCC. But when I was there, you are correct, it was restricted to U.S. companies.

The rationale for that was that MCC was a consortium of American companies in order to compete primarily with the Japanese in advanced computer technology. The question simply was, if we are going to be competing with those companies, then we are not going to let them in to learn the same things we are learning. The money was put up by the American companies, and they agreed among themselves that they would not open it to foreign companies.

Representative SCHEUER. If the Federal Government came in and were to provide significant funding to MCC, do you think that the Federal Government should require that MCC accept foreign-owned corporations as members?

Mr. DINNEEN. No, I do not. The way I answered the question before was I did not think the Government should legislate that foreign companies could not be members. The same way, I do not think the Government should legislate that foreign companies should be members. I think that is a decision that has to be made on a case-by-case basis.

Representative SCHEUER. What about the business of a foreign company—say a Japanese company or a West German company—coming into the United States, buying a company or getting control of a company that has a unique product, service, or technology, that they have developed over the years with significant government support? Even if you are just talking about the tax deductibility of their research and development funds, the taxpayers still have an interest in that. So a foreign company comes over here, acquires a company that has a very promising future technology, and then the foreign company transfers that activity to their own country and gradually shrinks or leaves the domestic company to twist slowly in the breeze. Is there a legitimate Federal role in preventing that type of scenario, of preventing a large foreign compa-

ny from acquiring the technology of the small company, sending that technology back home to Europe or wherever, and in effect, draining the lifeblood out of that promising small company?

Mr. DINNEEN. Let me say, I think that is a bad thing, but I do not know how you can legislate against it.

Representative SCHEUER. It would be easy to legislate against it. The question is, would that be a good thing or a bad thing?

Mr. DINNEEN. I do not think so. I would much rather do it from a positive point of view, which is to try to encourage—which is really what things like Sematech are all about—encourage our own companies to recognize those companies and support them. There have been many instances recently of companies which need more capital. You know all the cases, you read them in the paper too.

Then they go to the large American company—

Representative SCHEUER. That is what the leveraged buyout phenomenon was all about, wasn't it? Let's not get into that. That is a diversion.

Mr. DINNEEN. In my judgment, that is almost as bad for American R&D as anything else.

Representative SCHEUER. Yes, I agree.

Mr. DINNEEN. So to some extent, the question of buying a small company and ruining it or taking it away, what is the choice? In other words, if that company cannot take capital from a foreign company, and therefore goes out of business, are we any better off than if it takes capital and you run the risk of perhaps moving it away?

Ms. TYSON. Can I say something on this issue of the foreigners buying the technology? I think there are two issues here.

Representative SCHEUER. Could you pull that microphone a little closer?

Ms. TYSON. We seem to think it is a shame if an American company has a technology that is commercializable; American firms are not interested in developing the technology and it is sold to a foreigner. But when an American firm fails to develop the technology it either dies, or a foreign firm buys it and develops it, so the technology does not die.

Representative SCHEUER. But it is not here.

Ms. TYSON. We do not know where it will be produced, but it is developed. Somehow our consumers ultimately benefit because the technology will do something good for the world.

The third choice is we have a new institution which says it matters to us that there are commercial technologies out there that are not being supported by the private capital market, and we want to be able to do something about it. So we have something like MITI.

Representative SCHEUER. Now, this is an industrial policy.

Ms. TYSON. Why do we have to name it?

Representative SCHEUER. I do not use that as a pejorative phrase, believe me.

Ms. TYSON. Let's use another term—key technology center. You have a great display idea. You go around to domestic private financial markets and they say, the Japanese are better in displays than we are, we are not going to give you any money, forget it. However, we have a national interest in supporting display technology be-

cause the world display technology base is heavily concentrated in three or four companies. So we develop a way of providing support—temporary support, cooperative support, with the company, with the private capital market—so that the private technology is developed by private and public funds here, rather than by foreign funds. As long as we rob ourself of that last option, we are faced with the terrible choice of letting the technology die or letting the foreigners buy the technology. At which point, of course, we turn it over to the foreigners. We do not want to kill the incentive to innovate, to come up with the technology in the first place, by denying financing to individuals who do just that.

If we are not willing to come up with another institutional support mechanism, then we will have foreign investment. We cannot block it. We should not block it. We should think of other ways to encourage it. These other ways may require a change in some institutions and policies.

The second thing is really the issue of reciprocity. We also have to look carefully at who the foreigner is. There is a concern when foreign money is coming in as the result of profits that were accumulated in a foreign market closed to American firms.

When foreign markets are closed, American firms are robbed of profits abroad; and foreign firms that make profits at the expense of American firms may turn up to buy American technology. That strikes me as an inappropriate situation. Therefore, we have to look at these situations somewhat conditionally. We cannot let every foreign purchase of every U.S. asset go through on the grounds that it must be good for the U.S. economy.

Representative SCHEUER. Well, it has been an extremely interesting session. I want to thank you all not only for your creativity and your thoughtfulness, but for your patience too. It is exactly 12 noon. The Sun is just going over the yardarm. Thank you very much.

[Whereupon, at 12 noon, the committee adjourned, subject to the call of the Chair.]

